Gleanings in Bee Culture

Established 1873

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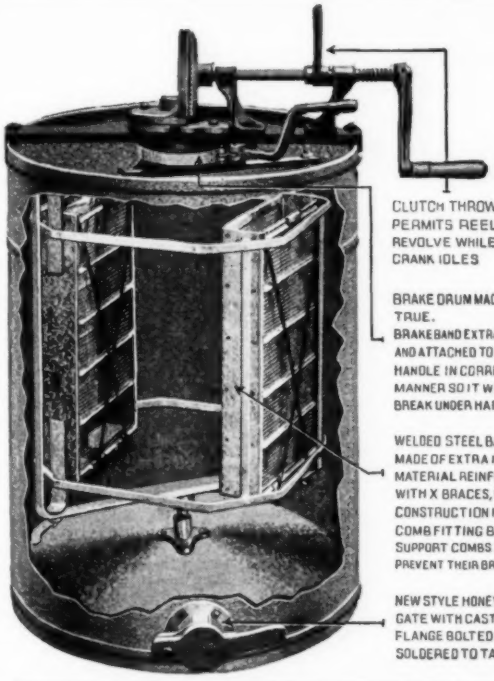
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The Monthly Honey Market

U. S. GOVERNMENT REPORT

Information from Producing Areas (last half of May).

California Points: Southern California—The weather has been unsettled, with considerable fog and cloudiness. Although it was clear and hot at the close of the period, earlier it was cooler than normal. The orange flow is over and there has been a heavy movement of colonies to sage and buckwheat locations in the hills and desert. The yield of Orange honey was disappointingly small. Some reports indicate a 30-percent crop; others report yields ranging from 10 to 40 pounds, with a large area in which the average production was around 12 pounds to the colony. Sage is about through blooming on the coast with very light yield, but will continue for some time in the hill sections. Bees are also working on sumac, mustard, wild alfalfa and other plants. Wild buckwheat looks stunted, with prospects for a flow uncertain. Demand for honey has been moderate to slow, with prices steady to slightly stronger. Sales by beekeepers in ton lots or more, per lb., at Southern California delivery points, range: extracted, Orange, new crop, Extra White to Water White 4½-4¾c, some 5¼-5½c, White 4-4⅝c; Sage-Buckwheat, old crop, Light Amber to Extra Light Amber $4.40-4.75 per case of 120 pounds; Mixed Flowers, new crop, Light Amber to Extra Light Amber $4.25-4.50 per case, Amber $3.60-3.75 per case of 120 pounds. Sales delivered San Francisco Bay area, White Orange 5½c per lb. Beeswax has been steady to firm at mostly 16-17c per lb. delivered Los Angeles.

Imperial Valley—Bees are in good condition for the honey flow from alfalfa, arrow weed and melons, which is just coming in. Colonies are running over with young bees and no swarming has recently been reported. Honey plants are in good condition and prospects seem encouraging. Sales reported old crop Light Amber to Extra Light Amber Alfalfa $4.40-4.45 per case of 120 pounds delivered Los Angeles; sales at country points $4.10-4.15, few $4.25 per case.

Central California—Light rains occurred over most of the area, with fairly heavy precipitation in a few sections. Drouth conditions in the foothill areas were not relieved by the late May rains, however. The orange honey flow was very disappointing. Some beekeepers extracted 10 pounds to the colony, but many beekeepers thought it best to leave the small crop on the hives. Reports from mountain areas are not encouraging. The weather has been too cool for bees to gather much honey, and sage is yielding poorly with little spikeweed or Jack clover being produced. Prospects are more favorable for wild buckwheat, than for other nectar sources. The market has been quiet with little buying on the part of local dealers. Demand has been rather slow for darker honey, with more demand for white and water white grades. Most local dealers have disposed of the bulk of their old crop honey. Sales by beekeepers in ton lots or more at Central California delivery points, per lb.: Extra Light Amber Cotton mostly 3½c; White to Extra White Orange old crop 5¼-5¾c, some 5⅞c; Light Amber to Extra Light Amber Wild Flowers 3-3¾c; Light Amber Mixed Flowers 2¾-3c with cans returned; Extra Light Amber 1938 crop Cotton 3c per lb. with cans returned.

Northern California—Showers have occurred over most of the area, but precipitation was not heavy enough to materially aid plant growth in non-irrigated areas. Even in irrigated areas thistle plants are still small. However, bees are working on Ladino clover, alfalfa, willows, cotoneaster, mustard, wild radish and alfalfa. The chief prospect for a flow of nectar seems to be from alfalfa. Due to the shortage of good bee pasture in the Valley, many colonies have been taken up to the higher elevations, some to 6,000 feet or more above sea level, where they are working on manzanita.

The movement of beeswax has been very light, with few sales by beekeepers reported at mostly 16c per lb. at Central and Northern California delivery points.

Pacific Northwest: West of Cascades—Rain has fallen over the entire area on several occasions and the condition of the nectar-bearing plants has considerably improved since the last report. Berry bushes are in heavy bloom and clover and alfalfa are also furnishing nectar so that beekeepers are more optimistic regarding the coming crop. Bees have recently gathered much pollen. The locust flow was almost a failure, but vetch yielded well in the Willamette Valley because of heavy night dews. Fireweed prospects are now encouraging. First cutting of alfalfa is now in progress in Southern Oregon. Beekeepers are increasingly desirous of unloading remaining lots of old crop Fireweed, even at price reductions. Sales reported of White Fireweed at 5c per lb. both f.o.b. shipping points and delivered Portland.

East of Cascades—Bees are not up to normal in development. They are working on white clover, early alfalfa, asparagus, sweet clover and basswood and recent rainfall has been helpful in bringing along the plant growth. Alfalfa and sweet clover are a couple of weeks ahead of normal. More rainfall is needed. Beekeepers are reluctant to sell old crop White to Light Amber Alfalfa-Sweet clover at offered prices of 4-5c per lb. for case lots or more, 60's 5-6c, small pails around 6-7c per lb., but some sales have been made at these figures.

Intermountain Section—Demand for honey in large lots is reported better, and it now appears that the holdover into the new crop season may not be as large as was expected a few weeks ago. Numerous cars of honey still remain, but if present interest continues beekeepers are hopeful that most of the White extracted will be sold before new honey is available. Demand for honey in small lots is reported fair. Two cars of extracted White Sweet clover and Alfalfa reported sold at 4¼c per lb., 1 car Extra White 4½c; ton lots or more 4½-5c, few 6c; 60's 5-7c, few 8c; small pails 5-8c, few 9c per lb.; Extra Light Amber small pails 6c per lb.; Amber Alfalfa and Rabbit Brush ton lot 3½c per lb., cans returned. Beeswax, 14-16c per lb. Details by States follow:

Colorado—The weather has recently been cool, especially on the Western Slope, where a hard frost was reported on May 23 that killed much of the early bloom. Bees were able to work on dandelions when wind and cold permitted them to fly, and yellow sweet clover was blooming somewhat before the frost. Much more precipitation is needed on the Western Slope if the flow is to be lengthy. Moisture conditions are among the best in years, however. In the Arkansas Valley, where strong colonies have been building up well, grasshoppers are reported bad in spots and adverse weather conditions have been hard on weak colonies. Sweet clover is blooming rather generally on the Eastern Slope, but bees have had little chance to work on it.

Wyoming—Recent rainfall has somewhat relieved the acute drouth situation. Bees, however, were doing fairly well as few are kept except in irrigated sections. However, more precipitation would be helpful. Winter losses

were almost negligible. Bees are in fairly good condition, building up on dandelions when the weather is not too cool and windy. Clover is in normal condition.

SUMMARY—Temperatures have been generally above normal in the East but at times below normal in the West, restricting bee activities. Lack of rainfall has been serious over much of the White Clover Belt, and to some extent also over the entire Sweet clover Region, though the drouth condition was relieved in many spots by rains during this period. Grasshoppers are already becoming numerous throughout the Plains and Mountain States and beekeepers in numerous sections are apprehensive regarding their effect on later honey prospects. It now appears, however, that Michigan at least may have a bigger nectar flow than in 1938. Recent rainfall has greatly improved conditions on the upper Pacific Coast, but much more rain is needed in California, where lack of precipitation has sharply curtailed prospects. The orange crop in Southern California was hardly 30 percent of normal.

Demand for honey has naturally declined with the coming of warmer weather, but sales are continuing in good volume, and beekeepers now feel that stocks of honey even in the Mountain States, in which the apparent holdover was substantial, may be much less than anticipated a few weeks ago. And if the present rate of movement continues stocks over the North may be surprisingly well cleaned up before new crop honey is ready for sale. Early reports of new crop honey in the southern tier of States indicate a disappointingly small out-turn on the whole. Prices of honey so far do not show much change, though occasional beekeepers, especially in areas where considerable honey remained, have been accepting price reductions in order to dispose of their old honey before the new honey came on the market. Other beekeepers are still holding firm in their price ideas because of the anticipated smaller crop in 1939.

Monthly Report of Honey Producers

Early in June we sent the following questions to honey producers: 1. At what price has honey been sold or contracted for, if any, in large lots (carload lots or less), in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, Fancy and No. 1, per case? 2. What are prices when sold to grocers in case lots of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per case? 3. What is the retail price to consumers in your locality of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per section? 4. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 5. How does the number of colonies that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent. 6. What is the condition of the honey plants at this time in your locality as compared with the average? Give answer in per cent. 7. What is the per cent of winter and spring loss of colonies (if any) in your locality? Give answer in per cent. 8. What is the present condition of the colonies in your locality as compared with normal? Give answer in per cent.

State	Name.	Carload lots. Ex.	Carload lots. Comb.	To grocers. Ex.	To grocers. Comb.	To consumers. Ex.	To consumers. Comb.	Movement.	No. colo.	Cond. of plants.	Pct. of loss.	Cond. of colo.
S-Ala.	(J. C. Dickman)			.35		.45		Fair	100	100		100
B. C.	(A. W. Finlay)	.08½		.65		.85		Fair	100	100	10	100
S-Calif.	(L. L. Andrews)	.04½				.55	.20	Fair	100	50	5	100
SE-Colo.	(Otis E. Adcock)			.40		.50		Slow	75	100	5	80
E-Conn.	(Allen Latham)			.75		1.00		Slow	50	90	25	50
S-Fla.	(C. C. Cook)	.04		.35		.50		Slow	120	100	10	100
C-Fla.	(Harry Hewitt)			.33		.49		Slow	100	100	2	125
SE-Ga.	(J. J. Wilder)	.05½		.50		.65		Fair	80	90	17	95
NC-Ills.	(A. L. Kildow)			.50					100	105	3	100
S-Ills.	(Carl E. Killion)	.07		.41	3.00	.60	.17	Fair	80	100	4	90
NC-Ind.	(T. C. Johnson)			.50	3.00	.60	.15	Slow	100	100	5	100
NW-Ind.	(E. S. Miller)			.50	3.00	.65	.15	Slow	90	100	15	100
W-Iowa	(E. G. Brown)							Fair	100	100	5	110
S-La.	(E. C. Davis)	.05		.35		.50		Fair	100	100	3	100
N-Maine	(O. B. Griffin)				4.75		.29	Slow	75	100	30	75
E-Mich.	(L. S. Griggs)			.40		.50	.17	Slow	110	70	20	100
S-Mich.	(Floyd Markham)	.06		.45		.65		Fair	100	75	5	100
C-Mich.	(E. D. Townsend)	.05						Fair	90	90		110
E-Minn.	(Francis Jager)								120	125	30	100
E-Minn.	(Floyd W. Ray)	.04¾		.38		.49		Slow	100	100	8	100
W-Minn.	(B. L. Morehouse)	.05		.45		.60		Slow	100	90	4	95
C-Nebr.	(J. H. Wagner)	.06	3.60		4.10	.49	.22	Slow	80	85	5	90
NW-N. Y.	**(Geo. B. Howe)**					.60	.20	Fair	90	100	10	100
C-N. Y.	(F. W. Lesser)	.06						Fair	100	90	5	100
C-N. Y.	(N. L. Stevens)					.60		Slow	95	100	90	
SE-N. C.	(W. J. Martin)	.06¼		.55		.75		Fair	100	90		90
C-Ohio	(R. D. Hiatt)			.45		.62		Slow	98	80	5	95
NC-Okla.	(C. F. Stiles)			.45		.65		Fair	95	95	5	95
W-Ore.	(H. A. Scullen)			.35		.38	.15	Fair	100	100	5	100
C-Penn.	(Harry Beaver)			.50		.60		Fair	100	60	3	100
SE-Penn.	(D. C. Gilham)			.70	3.75	1.00	.25	Slow	100	100	8	100
W-S. C.	(E. S. Prevost)			.60			.17	Fair	100	100		100
SE-N. D.	(J. F. Norgren)			.43		.55		Slow	110	80	25	100
C-Tenn.	(J. M. Buchanan)					.75	.20	Fair	100	125	1	100
E-Tenn.	(W. L. Walling)							Fair	110	100	0	110
C-Texas	(T. A. Bowden)			.45		.55		Fair	95	95	2	100
S-Texas	(J. N. Mayes)								50		40	50
S-Texas	(H. B. Parks)	.05		.48		.55		Fair	90	70	2	80
N-Utah	(W. H. Hendricks)					.45		Fair	80	100	25	85
S-Va.	(T. C. Asher)			.50	3.50	.70	.20	Fair	90	90	7	75
SC-Wash.	(Chas. Higgins)	.06				.49		Fair	75	30	5	75
N-W. Va.	(W. C. Griffith)					.50	.18	Slow	100	50	0	100
SE-Wis.	(N. E. France)	.05				.55	.14	Slow	100		0	100
N-Wyo.	**(Earl C. Reed)**			**.45**		**.55**		**Fair**	**90**	**100**	**10**	**100**

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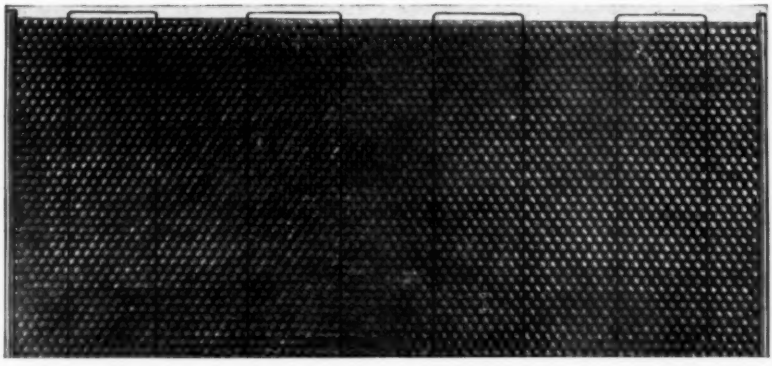
AND HERE IT IS



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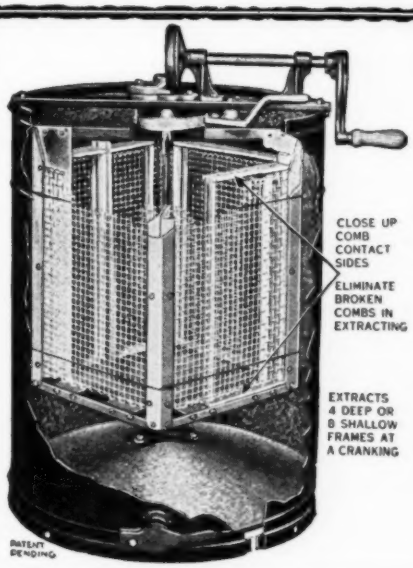
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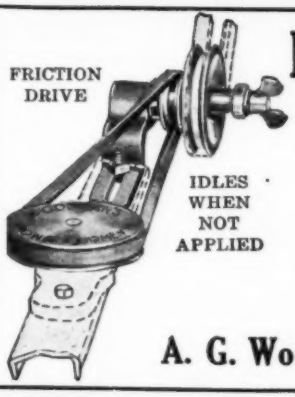

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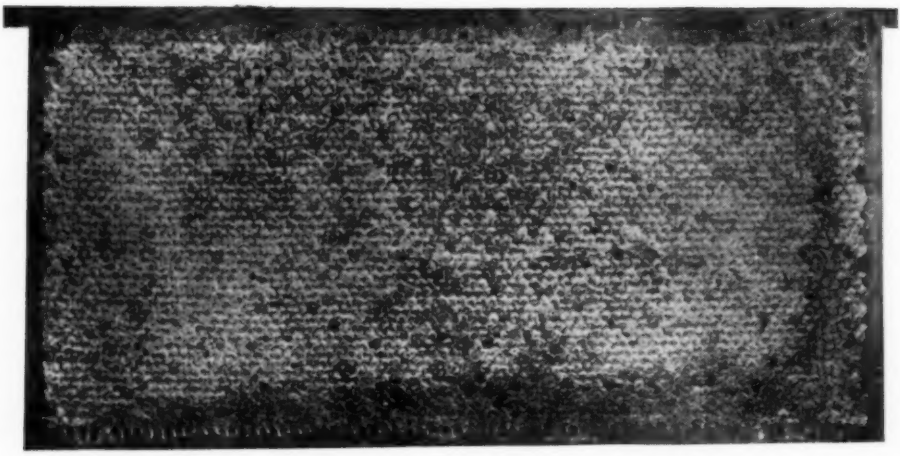

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Plain Surplus

Vol. 67
No. 7

Gleanings
in Bee Culture

July
1939

Marketing and Organization

J. E. Eckert

Two Urgent Needs in Our Industry Today

In looking over the programs of various beekeepers' conventions held during the past year, two topics seem to be of greatest interest throughout the country—marketing and organization. Production problems, swarm control, even inspection difficulties have received scant attention. Standardization was a topic of prime importance but then this is connected directly with marketing. Methods of processing honey, of improving its appearance when it comes before the public, of putting honey on "dress parade," has proved to be one of the most timely topics in all of our county, state and national meetings. Discussions of honey exhibits at fairs and in show windows have occupied important places on the various programs and in the pages of our beekeeping journals. Some beekeepers spend weeks each year in contriving bigger and better exhibits that their honey may be brought more forcefully to the attention of the buying public and if we are to judge the success of their efforts by retail sales, they are well repaid for their efforts.

One could ramble on in the above vein for pages without even stopping to make a new paragraph or even to inject a new idea. It is all an old story, and improvement depends on action rather than talk. In time of war, and such times seem to be increasing in favor throughout the world in spite of the tragic experiences suffered only a few short years ago, a unified national spirit is the mainspring that has to be wound up in order to make the war machine run. Local demonstrations have only a local meaning until the spirit spreads to sufficient localities to influence the great majority to bend all efforts in a common cause.

The beekeeping industry may be compared to any other agricultural industry spread thinly over the entire nation. Each community or locality has its individual problems, often coupled with economic or environmental factors beyond its control. Sometimes these problems can be solved at local conventions, but at other times, the local conditions are caused by national or international complications and forces that can be influenced only by winding up the mainspring of common interests so that action can be taken on a national scale. Marketing and organization are two topics that, under present systems of distribution, of barter and trade, fit best into a national program.

Several county, regional, and state organizations are interested in adopting a program that will bring better prices through the increased consumption of honey. Local associations are formed of beekeepers who have known and trusted each other for years. They form a loose organization or even incorporate in order to secure the advantages of state or federal bonded warehouses. This often solves the problem of financing their operations and makes unnecessary the dumping of honey on a market that is saturated with honey during the extracting season. They also find that they have to grade their

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product according to certain definite standards, but this is done willingly for they know it will in the end improve their product and increase the confidence of the buyer in the honey they have to sell. Their successes attract other beekeepers in their community and tangible results are manifested. However, such organizations are generally confronted with the competition of neighboring localities often hundreds of miles away where no such organizations exist, and also with the very flexible trucking industry, with changing freight and express rates, and many other factors far beyond their control. They can improve their lot only so far and then the rest depends upon other groups of similar interests forming similar organizations and all working toward a common goal. Marketing depends on proper organization just as the welfare of the colony depends on the united efforts of all its individual members.

Last fall the question came before the annual convention of the California State Beekeepers' Convention as to whether or not they wanted to put on and maintain a honey exhibit at the Golden Gate International Exposition in San Francisco. There was no doubt in the minds of those present as to the "wanting" but there was considerable doubt in the minds of many as to how the project could be financed. The decision had to be made quickly, before an attempt could be made to raise the necessary finances, but with the optimism inherent in all beekeepers, the die was cast in favor of an exhibit. The central theme was designed by Mrs. Atchley, and members of the California Honey Promotion Committee. Beekeepers and commercial interests alike donated their time, money, and services in putting the exhibit together and in place. The result is an exhibit that is different and truly beautiful. It arrests the attention of all who pass by the booth and will undoubtedly have a beneficial effect on honey sales this year among prospective customers who visit the Fair on Treasure Island. California is doing her bit this year to put honey on dress parade before the tourists of the country.

In another building at the same Fair, the beekeepers of San Diego County have a honey display that is a credit to any world's fair, and honey forms the part of many other exhibits as well. Live bees in at least two different exhibits attract the attention of the visitors to the beneficial aspects of the beekeeping industry and cause many to think of honey in terms of something very worth while to buy. I will not take the time or space to describe any of these exhibits in detail and pictures do not do them justice. But there are so many other features worth seeing at the Golden Gate Exposition that each reader will be well repaid for making a personal visit to the Fair and seeing for himself. The trip will be doubly valuable if made in conjunction with the National Beekeepers' Conference scheduled for Sacramento, November 7 to 10, 1939.

And this brings us back again right to where we started on the subject of marketing and organization. Without some form of organization, the beekeepers of California could never have put on this exhibit. The name of the California State Beekeepers' Association alone was the only means by which the beekeepers of California could have acquired the space for the exhibit in Agricultural Hall.

The name of the American Honey Producers' League is worth much to the beekeeping industry of the country, especially when the beekeepers of the nation want something through legislative channels for the benefit of their industry as a whole, **but it cannot survive in name alone.** How much more influential would the League be if every county beekeepers' association were affiliated with the League through the various state associations. It would not be necessary to put in effect the slogan of "Let George or Cary do it" but every secretary of every beekeepers' organization, county, regional, or state, would be a committee of one to encourage membership in the national organization. And one of the chief projects of the League would be, as it has been for several years, to maintain the American Honey Institute in a position that would enable it to serve the beekeeping industry as a national center for the distribution of facts concerning honey.

Organization begins, literally, in our own counties, but unless our organizations include affiliation with the state and national associations, we will not be in a position to receive the many benefits of our indi-

(Continued on page 461)

Green Honey

Chas. Mraz

It is Difficult to Get People Who Have Used Poor Honey to Taste Good Honey

When it comes to increasing honey prices and bettering marketing conditions, price fixing and monopoly through "cooperation" is usually dusted off, brought forth to beekeepers dressed up in new clothes by its various sponsors and offered as a remedy for low prices and over-production. Such an appeal for cooperation we find in the article "Writing on the Wall", by Bruce Morehouse in January Gleanings. Nothing would be better for beekeepers if we could cooperate to increase advertising and publicity for honey. When it comes to fixing prices, it means trouble. It is one thing to fix prices and another to make people pay them. If we fix a "fair" price for our honey and the public thinks it too high, we are told to keep our honey. Not much sense to fixing prices for honey if you can't sell it.

There is one thing all beekeepers can do to better our market, and that is something that is seldom discussed. One of the biggest obstacles to increased honey consumption is green honey. Many beekeepers, especially large producers, are not aware of the injury such honey is doing to the whole honey industry. Some commercial beekeepers are inclined to be concerned only with filling up the honey cans regardless of what goes into them.

The East is a large consuming market for honey and I have plenty of opportunity to taste honey that is shipped here in competition with our own. Due to small crops, we must get higher prices. To do this, we must have better honey. It is difficult to say how much of our national honey crop that reaches the markets contains some green honey. It is more than we believe, perhaps 50% of it contains some green honey.

Cheaper to Produce Green Honey

It is sometimes cheaper to produce green honey, thereby giving a larger margin of profit for the producer. Much green honey is due perhaps to migratory beekeeping. Where bees and equipment have to be lugged around many miles by truck, only one or two supers are sometimes used to save trucking of equipment. With only one or two supers to catch the honey flow, it is usually necessary to extract these supers when they are full whether or not the honey is sealed over, in order to give the bees more room.

During a heavy flow the supers are usually full before the bees have even started sealing combs. The same holds true with many beekeepers who do not have more than one or two supers per colony. Extracting unsealed combs requires less work in uncapping, but results in green honey.

Fermentation can be prevented by heating, but I wonder if any of the beekeepers who produce such honey ever eat any of it? Nothing makes a bad name for honey any quicker than to have people eat honey that tastes raw, sharp, and burns the throat all the way down. Most consumers don't know why honey tastes that way, but most of them think if that's honey, they won't have any more of it. The honey sets on a shelf as a warning to any future purchases.

It is a common occurrence to find people who say they do not like honey, yet if given a taste of smooth, mellow, flavorful well-ripened honey, open their eyes in amazement and say, "Why, I never tasted honey like that before". Then and there a customer is made and you can be sure they'll know good from bad. The tragedy is, when people get the idea they don't like honey because of some past experience with poor stuff, it is difficult to get them to try any honey at all.

Have Enough Supers to Hold Crops

In the end, it really is cheaper to have enough supers to hold almost the whole crop of honey so supers need not be taken off until all honey is sealed. The extra investment one makes for the extra equipment is more than repaid by getting that extra honey that is usually lost during a fast flow when short supering is practiced. It pays for itself by producing honey that will make customers come back for more. It is

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XUM

Hand Truck Saves Heavy Lifting

Benj. Nielsen

Adjustable Feature Permits Use on All Sizes of Hives. Easy to Make and Simple to Use

Fig. 1.—The loaded truck is rolled up a gangway onto the bed of the truck or trailer. Two planks 2 x 10 inches and 10 feet in length were used here.

Moving hives with several honey-filled supers is a task no beekeeper relishes. Ordinarily it is a real job for two men. Should one optimistic, misguided soul tackle this job alone, he finds the supers must be pried apart and lifted separately—and there will be bees all over every place no one wants them to be. When the job is finished, or if it is finished, this disillusioned individual, attempting to straighten a sore back, vows never again. There must be an easier way. And there is, as the magazines' catchy headings read, an "easy way to do difficult things."

Fig. 2.—The grasping arms of medium heavy strap iron are raised and lowered by means of the U-shaped iron rod handles.

If you have a weak back you will derive a great deal of satisfaction in using the handy, easily made truck shown in the accompanying illustrations. With this truck it is no trick at all for one man to pick up and load the heaviest of hives; no need to tear the supers apart; bees are little disturbed. Due to the air-filled rubber tires it is possible to roll the loads over uneven ground without sufficient jolting to disturb the bees; hives and supers remain sealed together with propolis, so there is no disagreeable slipping to hinder operations or break the combs. Simply pick up the hives, roll them along and up the double-plank gangway, onto the truck or trailer bed, and press the lever to unload—the job is done, "untouched by human hands."

It is Easily Made

In making this handy truck two cultivator handles, two rubber tired 10-inch coaster air tires, some iron and lumber for the framework are needed. The framework is made just

wide enough to take the widest hives. The legs are bolted on and braced as shown in Fig. 1. Holes are bored in the cultivator handles, 3 inches from the lower end and the axle is inserted. The rubber tired wheels can be "borrowed" from the children's wagon or purchased from mail-order houses. The grasping arms are of medium heavy strap iron, measuring 20 and ½ inches from bend at the ends to the truck bed.

The adjustable feature, which adapts the truck for use with varying sizes of hives, consists of a ½-inch iron rod, which extends through the handles, four inches above the axle and two beveled pieces of iron, Fig. 3. The holes through which the rod extends should be slightly oversize to permit free movement. Have a blacksmith thread both ends of the rod, and bevel two 2-inch squares of iron, drilling a hole through the centers and cutting the threads to screw onto the rod. The threads should be cut just far enough to allow the bevels to be screwed tightly on the rod, but the beveled pieces should not fit tightly against the frame. Over-sized holes should be drilled through the ends of the grasping arms, which are slipped on this rod, next to the bevels and held in place by nuts. The bevels and iron rod are moved as one, by the iron rod arm, which extends upward within easy reach of the operator.

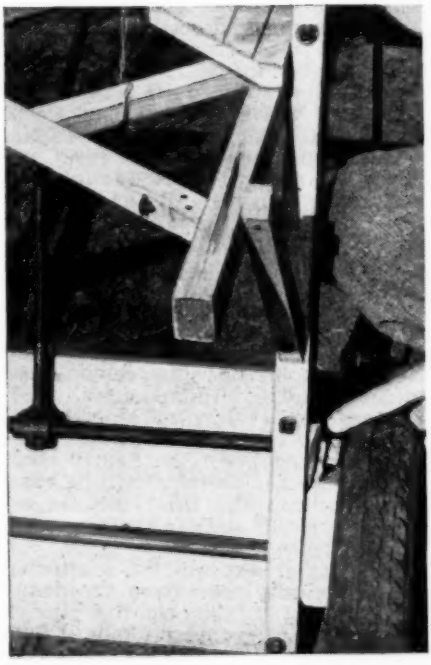
How It Works

The grasping arms are raised and lowered by means of the U-shaped iron rod handle, Fig. 2, raised by a forward movement of the handle, the grasping arms remain up, due to the ordinary door spring, which is fastened to the top end of the iron handle. The opposite end of this spring is fastened to the cross-brace of the legs, Fig. 4, at the proper tension to hold the arms up. As the arms are lowered, the bevel pieces cause the outer ends of the arms to swing in, the bends hooking over the front end of the hives.

For wide hives the iron rod in the center, Fig. 2, is pushed forward, and back for narrower ones.

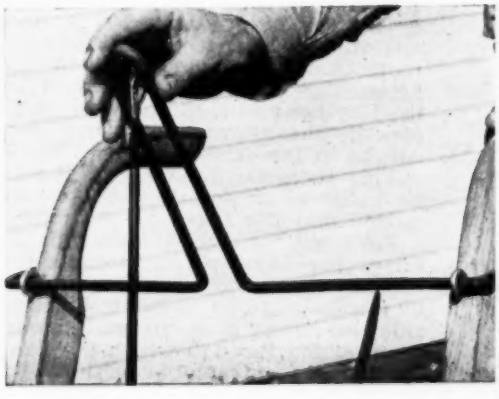
The evening time is usually best for moving bees and they may be moved short distances without closing the entrances, if a little smoke is used before the loading begins.

Aurora, Nebr.



No. 3. (left)—The adjustable feature consists of a ½-inch rod, 4 inches above the axle, and a beveled 3-inch iron square screwed on each end of the rod.

No. 4. (below—The grasping arms are held up in position by an ordinary door spring attached to the top of the U-shaped iron.



XUM

A Method of Clarifying Honey

Lloyd C. Gardner

Four Settling Tanks Obviate the Use of Sticky Strainer Cloths and Heat

In January, 1935, page 24, I gave out through Gleanings in Bee Culture, a new idea of honey clarification which has since met with considerable favor. With some slight changes I still use this system. And I believe, for the reason of simplicity it is far superior to many of the methods of clarification in use at the present time.

Of course a little "horse sense" will have to be used with this as with any similar method in order to obtain the highest possible degree of clarification.

By checking the diagram carefully, one can readily see at least two points in its favor. Namely, rapidity and the elimination of sticky, messy strainer cloths. It usually follows that there must be some squeezing of the cloths by hand to get rid of the honey held up by the clogging of the strainer with wax particles, pollen grains, etc. Every one knows that the least that human hands come in direct contact with foods the better for all concerned.

When I first gave out the system we pumped directly into the first tank or No. 1, from the extractors. We have since found that by adding a square low tank, No. 5, to receive the honey from the extractors, most of the larger wax particles are retained in this tank from which they are more easily skimmed off than from the tall storage tank. Of course it is necessary to skim all the storage tanks at intervals during extracting. However, with the addition of this receiving tank, No. 5, this operation is less frequent. Moreover, more storage room is left in the amount which otherwise would be used by the accumulating wax particles in the storage tank but now caught in the receiving tank, No. 5.

This receiving tank, No.5, should be made according to the size required and the speed of extracting.

For instance, when four tons of honey per day are run through, the dimensions should be perhaps 30 by 60 inches by 16 or 18 inches high inside. An opening at one end should be provided through which the honey from the extractors can flow and another at the opposite end fitted for a pump connection. A baffle, C, No. 5, should be built in the end nearest the pump connection in such a way as to prevent the coarser wax particles entering the pump line.

The second change is the addition of a conical-shaped metal disc or "spreader", AA, in tank No. 1, as we term it, fastened near the top of the tank onto which is pumped the honey. The purpose of this spreader is to cause the honey to flow down the inside walls of the tank thus eliminating many of the air bubbles which resulted when the honey was pumped directly into the tank. The disturbance within the tank is not so great with a gentle flow from a spreader as when an unrestricted stream is allowed to fall at some distance directly onto the settling honey. By this means very little if any wax particles are carried below the surface.

Of late I have received some letters requesting information asking for the exact method of procedure and operation.

As previously described, the honey is pumped from the receiving tank, No. 5, into No. 1 storage tank. (The valves between all tanks at the beginning are closed.) When No. 1 tank is filled the valve between No. 1 and 2 is opened permitting the honey to enter No. 2. Pumping is continued until both are nearly filled at which time the valve between No. 2 and 3 is opened and the process continues until all tanks are practically filled.

The honey is allowed to stand until the next morning or from 12 to 14 hours before it is drawn off from No. 4. Experience has shown that under ordinary circumstances, ie., if the weather is fairly warm, sedimentation (the rising of small particles to the surface) will be nearly complete and what remains will be completed within the time usually required in the drawing off process at gate 4.

To further explain the matter, it can be readily seen from the drawing that only the clearest honey from each of the four tanks will flow

into the next or succeeding tank because of the location of the inlets which are the upright pipes about half way up in the tanks 2, 3 and 4. The honey is drawn **only** from No. 4 tank so that the process may be completed.

Thus it follows that No. 4 tank **only** can be entirely emptied. The level of the honey in Nos. 1, 2 and 3 will remain at a point the height of the upright inlet pipes, B B B. And of course in order to have only clear honey drawn off, No. 4 tank should not be drawn much below the half-way mark.

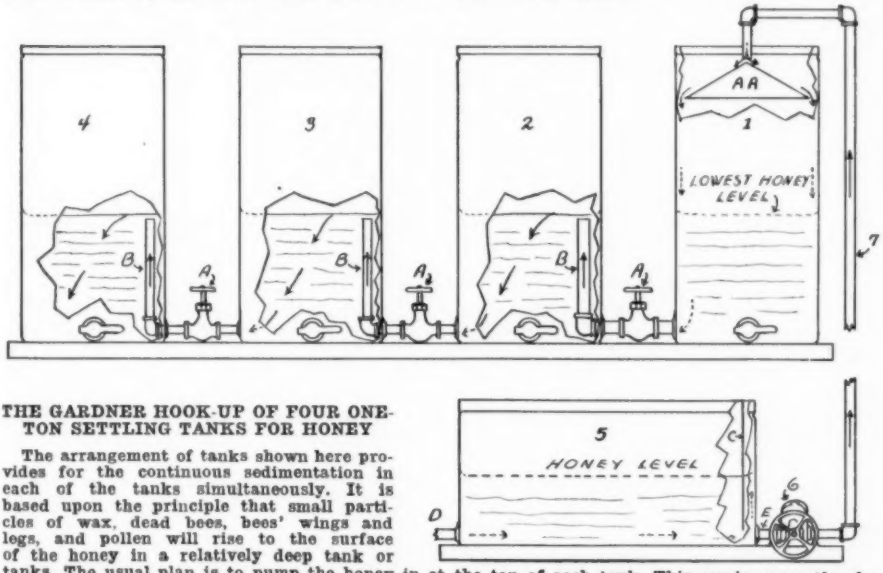
After once the process is started, it becomes a continuous operation. The honey drawn from No. 4 tank has settled practically 12 or 14 hours before it is drawn off each succeeding day, as the honey is never drawn off the same day it is extracted.

Size of Connecting Pipe

We are using 2-inch pipe between Nos. 1 and 2, and 1¼ inch between the others. While these sizes work well with our set-up and under our conditions, they possibly would not work so well under others. So it would be well to consider this matter when setting up a system of this kind.

We do not heat the honey but pump it as it comes directly from the combs. Should the storage tanks be located within a separate and heated room in order to speed up sedimentation, or where it is pumped through a low heated water for the same purpose, much smaller connecting pipes between the tanks could be used.

Our tanks are constructed so as to hold a ton each. The diameter is 30 inches with enough height to provide the necessary room to hold this amount. I believe that sedimentation is much more rapid in a tall tank than in a low flat one because of the greater weight to be had over a smaller space.



THE GARDNER HOOK-UP OF FOUR ONE-TON SETTLING TANKS FOR HONEY

The arrangement of tanks shown here provides for the continuous sedimentation in each of the tanks simultaneously. It is based upon the principle that small particles of wax, dead bees, bees' wings and legs, and pollen will rise to the surface of the honey in a relatively deep tank or tanks. The usual plan is to pump the honey in at the top of each tank. This carries over the debris as well as air bubbles. After standing one or more days, depending on the temperature of the honey, the surface is skimmed off when the honey is drawn off at the bottom but not clear down.

Note by this scheme of piping into tanks 2, 3 and 4 that the delivery pipe B from the preceding tank in each case extends up 24 inches from the bottom. The sediment after 12 or 14 hours will rise to the top or near the top leaving that portion below the top of these several stand pipes B B B relatively clear. This means that the honey as it goes from tank to tank will become more clear, that is, with less sediment or air bubbles as it proceeds to the final tank No. 4 from which the honey is finally drawn. The debris is constantly rising to the surface in all four tanks over night when pumping or extracting is suspended until some time the next day.

The valves between the tanks are used only during the first filling of all the tanks. After that, they are left open and extracting and filling goes on continuously during the day. During the night the valves are all open and sedimentation goes on all night in all four tanks. When extracting is begun the next day or rather before the tanks are drawn down from gate on No. 4 to a little over half way or to the level of the top of the stand pipes B B B. Extracting and pumping is begun again until all the tanks are filled.

XUM

AFB Resistancy

H. S. Rogers

Is It Worth Cultivating in Bees?

Several beekeepers I have met have expressed the feeling that AFB resistancy in bees may be worthless. To illustrate their position may I quote an experience I had some years ago? In inspecting my apiary I came across a strong colony that had AFB. I was in a hurry and the colony was strong enough to defend itself so I merely marked the colony, reduced the size of the entrance, and left it to be taken care of later. Later inspection showed that in the interval the old queen had been superseded and the bees had succeeded in raising a new queen. In the process they had been broodless long enough to clean up and the new brood showed no disease. I still suspected AFB and so did not super them, but left them untouched until the next year. The following year they still remained clean and were given no special treatment, but the second year I requeened them with a different strain of bees, whereupon they **immediately** came down with AFB and had to be burned!

The promptness with which the brood of the new queen developed disease proved to me that the hive had been infected with fb during the two years that it appeared clean and that the fact that the disease does not appear in the brood of a disease-resistant colony does not mean that the spores of the disease have been gotten rid of! Therefore, even with disease-resistant bees we can not afford to be careless. Apparently disease resistancy does not remove the necessity for burning.

If this be true then what good is disease resistancy? To illustrate again, a beekeeper acquaintance tells this story: About ten years ago he lost most of his bees with AFB. The few colonies that remained he used for making increase and built up again to his original count. He had no more trouble with fb for eight or ten years. But then a man he hired objected to the vicious disposition of his bees, hence he made divisions and gave them imported queens of a quiet strain. These new bees caught AFB and from them as a source of infection he lost most of his apiary again. What the source of the infection was is unknown, but certainly the imported bees got it **first** and served to transmit it to the others.

Similarly, where did my bees get AFB? This section of the city is newly built up from the prairie, there are no bee trees, and no other beekeepers. The only possible source of infection that I can think of is occasional empty honey containers thrown out in the garbage. Of course only the **one most susceptible** colony caught the disease at first. The others, due to my ignorance, caught it from that one.

A report from the U. S. Bee Culture Laboratories in the bee journals a couple of years ago quoted spore counts in honey extracted from apiaries containing AFB and the results obtained from feeding such honey to bees. Their conclusion was that only very rarely could disease be transmitted by bees robbing out empty honey containers. Probably only the most extremely susceptible colonies could pick up the disease in this way.

It seems that the real cause of the spread of AFB is **extremely** susceptible bees. One such colony I once had seemed unable to raise even one single larva to maturity! Some strains of bees seem actually "allergic" to AFB! Individual colonies of such a strain seem to come down with it spontaneously, having no observable source of infection. They succumb to the disease very quickly and are robbed out before the beekeeper knows the disease is around. One unusually susceptible colony thus infects the whole apiary!

It is plain that even a slight degree of resistancy would be sufficient to prevent the **start** of the disease in an apiary. Resistancy may be useless for cleaning up diseased colonies, as is contended, but as long as our bees are highly susceptible it must prove an almost impossible job to eradicate AFB. An occasional bee-tree, or an occasional swarm hived in a box by some amateur, or an empty honey container thrown out by the consumer may be a source of infection and **can not be avoided.** Thus the disease must necessarily be a constant threat until and unless we get disease resistant bees!

Honey in the Summer Menu

Mrs. Benj. Nielsen

Let Nature's Sweet Aid You in Your Campaign for Kitchen Freedom

Frosty Brazilian chocolate is a real taste-thriller for hot days. Top it with a generous dash of honey-sweetened whipped cream.

When the days are longest and the sun's rays the hottest, those industrious bees never seem to mind the soaring temperatures in the least; in fact, that's when they are the best-natured and the busiest—working early and late. Mr. Beekeeper, quite content to let the bees do the work, is apt to hunt for a shady spot, as soon as he can, quite frankly "slowing up." Mrs. Homemaker hunts through her files and scans the pages of her favorite magazines for quick, easy recipes, which will keep her family well nourished and give her more kitchen freedom. Now is the time to reach for the honey jar! There is no more wholesome way to furnish quick energy than through the use of generous amounts of honey in our summer menus. Requiring little or no digestion before being assimilated, honey furnishes that healthful quick energy so necessary to refresh heat-fagged bodies.

During long, hot summer days the youngsters' "pocket money" finds its way quickly to the nearest drug store, in exchange for tall, frosty drinks. Wise is the mother who anticipates this possibility and keeps on hand goodly supplies of fruit juices and honey syrups, both plain and chocolate flavored. A few cents spent for handy hand shakers is money well invested. The children enjoy mixing and shaking their own drinks and they may surprise you with their creations.

If the urge to indulge in carbonated, or "fizz" drinks, becomes a habit, milk, so essential to the growing boy and girl is apt to be crowded from the diet. Start the summer right by introducing the younger generation to wholesome, delicious honey chocolate syrup—and let them try a hand at new concoctions. With a supply of chocolate syrup always on hand it's no trick at all to whisk tasty drinks together—at a fraction of the cost of those handed over the counter. So assemble: One-half cup cocoa, 1⅓ cups honey, dash of salt, 1 cup cold water and 2 teaspoons of vanilla.

Combine the cocoa, honey, salt and water, mixing well. Place over low heat and stir constantly until the honey is dissolved. Bring to the boiling point, reduce the heat and simmer gently for 5 minutes. Remove from heat and add vanilla. Pour into sterilized jar and seal tightly. Cool and store in refrigerator. This syrup will keep fresh for weeks. In making drinks allow 4 to 5 tablespoons of the syrup to a glass of milk and be sure to serve very cold. For variety: add a well beaten egg for chocolate eggnog; a dash of honey-sweetened whipped cream makes a luscious chocolate "iceberg"; two or three drops of peppermint extract for frost-tinged mint chocolate; and a bit of ice cream for a deluxe affair.

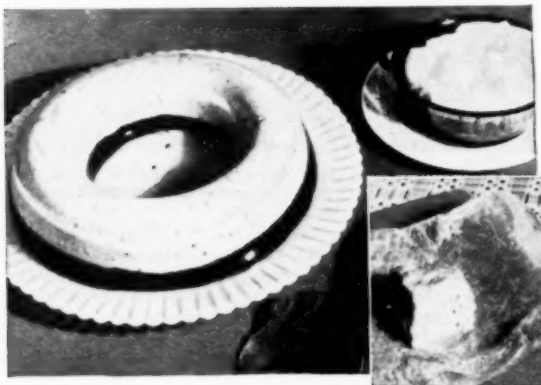
The delightful flavor of honey-made drinks, the smooth velvety texture of honey ice creams are the answer to Mrs. Homemaker's search for delectable, nourishing summer-time treats. These recipes are designed to let you out of the kitchen in a hurry—and to keep you out.

XUM

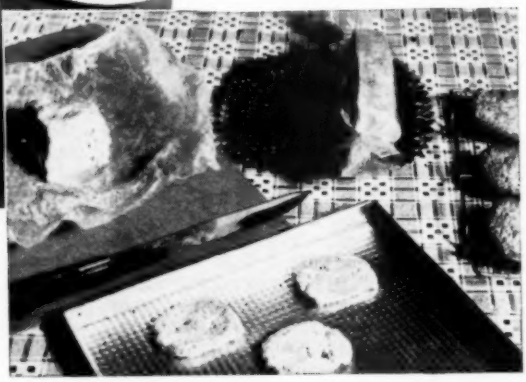
Two-Toned Coffee Bavarian

Two tablespoons Knox Sparkling Gelatine, ¼ cup cold water, 3 cups strong coffee, ½ cup honey, dash of salt, ½ teaspoon vanilla and 1 cup cream, whipped.

Soften the gelatine in the cold water. Add honey and salt to the hot coffee, stir in the softened gelatine, stirring until completely dissolved. Remove from heat, add vanilla, and divide in two parts. Chill both parts.



Dessert is no problem when Coffee Bavarian cream is chilling in the refrigerator.



With rolls of dough awaiting in the refrigerator, cookies are baked in a jiffy in the cool of the morning.

To one part add the cream, whipped until stiff. Pour into ring mold, which has been rinsed in cold water. Place in refrigerator to chill quickly. Pour second part over this and return to refrigerator to chill until serving time.

Honey Orange Fluff

Two eggs, grated rind of ½ lemon, 1 tablespoon hot water, 2 tablespoons lemon juice, 3 tablespoons honey, 3 tablespoons orange juice and the grated rind of ½ orange.

Separate the eggs, beat the yolks with two tablespoons of the honey, beating until light and lemon-colored, adding the honey gradually and beating constantly. Add the grated rinds and the fruit juice. Add hot water, beating constantly. Cook the mixture in top part of double-boiler until it coats a spoon, stirring constantly. Pour over the egg whites which have been beaten until stiff and into which the remaining tablespoonful of honey has been beaten. Pile the mixture into glasses. Chill and serve very cold.

Honey Oatmeal Icebox Cookies

One-half cup butter, ½ cup honey, ⅓ cup sugar, 2 cups rolled oats (quick), ⅓ cup milk, 2 cups sifted cake flour, ½ teaspoon soda, ¼ teaspoon nutmeg, ¼ teaspoon salt, and ½ teaspoon vanilla.

Cream together the butter, honey and sugar until light and fluffy; add oats and mix well. Add milk and vanilla gradually and beat until creamy. Sift dry ingredients together and add to the first mixture. Mix well. Chill thoroughly, then shape into rolls. Chilling first is necessary as the mixture is too soft to shape at first. Do not add more flour at this stage. Wrap rolls in waxed paper and store in refrigerator to chill thoroughly. Slice thinly, bake on well-oiled cooky sheets, in a moderate oven, 350 degrees F. for 10 to 15 minutes. The unused portion of the rolls may be returned to the refrigerator, wrapped in waxed paper, to be used for other bakings.

Brazilian Chocolate

Two squares unsweetened chocolate, 1 cup strong coffee, dash of salt, 3 tablespoons honey, and 3 cups rich milk.

Combine grated chocolate and coffee, place over low heat, cook, stirring constantly until the chocolate is melted and blended. Stir in salt and honey. Simmer gently for 5 min-

utes. Place over rapidly boiling water, add the milk, stirring constantly. When hot, beat with rotary beater until frothy. Cool. Pour over cracked ice, top with honey-sweetened whipped cream.

Iceberg Chocolate

Two cups hot coffee, 4 teaspoons honey, 2 squares unsweetened chocolate, 4 tablespoons honey, 1 cup boiling water, 3 cups hot milk, ½ teaspoon vanilla and whipped cream.

Add four teaspoons of honey to the hot coffee, stir until dissolved and pour into an ice cube tray. Freeze. Shave the chocolate and add the remaining honey and boiling water. Heat to the boiling point, stirring constantly. Remove from heat, add hot milk and vanilla. Stir until well blended. Chill. To serve, pour into tall glases with the coffee ice cubes. Add a dash of honey-sweetened whipped cream to the top of each floating ice cube to transform it into an "iceberg."

Honey Ice Cream

Two cups milk, 2 teaspoons Knox Sparkling Gelatine, ⅓ cup honey, few grains of salt, 1 cup cream, whipped, 1 teaspoon vanilla.

Reserve ¼ cup of the milk, scalding the remainder. Sprinkle the gelatine over the cold milk, when softened add to hot milk; stir in honey and salt. Cool. Fold in the cream which has been whipped and the vanilla. Pour into the tray of a mechanical refrigerator; freeze quickly until the mixture becomes firm. Remove to cold bowl and beat with electric or rotary beater until the mixture is smooth. Continue freezing. If made in a freezer, it is not necessary to whip the cream.

Honey Chocolate Ice Cream

One and ¾ cups milk, 1½ squares unsweetened chocolate, ½ cup honey, ¼ cup milk, 1½ teaspoons Knox Sparkling Gelatine, 1 cup cream, whipped, 1½ teaspoons vanilla and a few grains of salt.

Scald 1¾ cups of milk, add the grated chocolate and beat with rotary beater until well blended; stir in the honey and salt. Meanwhile soften the gelatine in the ¼ cup of milk. Stir into hot mixture and continue stirring until the gelatine is dissolved. Cool. Add whipped cream and vanilla. Freeze in mechanical refrigerator, following the procedure used in the above recipe; or in a freezer.

Honey Peppermint Candy Ice Cream

Two cups milk, 1½ teaspoons Knox Sparkling Gelatine, ¼ to ⅓ cup honey, few grains of salt, 1 cup cream, whipped, and ½ cup finely crushed peppermint stick candy.

Reserve ¼ cup of the milk, sprinkle with the gelatine and scald the remaining milk. Stir the honey into the hot milk. The amount of honey will depend upon personal taste. The peppermint candy sweetens the mixture, so care must be taken lest too much honey is used. Add the softened gelatine and stir until thoroughly dissolved. Fold in the whipped cream. Freeze until mixture becomes firm, add crushed candy, stirring well. Continue to freeze, stirring mixture two or three times while freezing.

Fresh fruits crushed and sweetened with honey make excellent toppings. Chocolate seems to lead the flavor parade and here is a good, easy-to-make one, which may be varied to suit the occasion.

Honey Chocolate Sauce

Two squares unsweetened chocolate, 5 tablespoons of water, ⅓ cup honey, dash of salt, 3 tablespoons butter and ½ teaspoon vanilla.

Add grated chocolate to the water, place over low heat and stir until blended. Add honey and salt and cook until the honey is dissolved and mixture is slightly thickened, stirring constantly. Remove from heat; add butter and vanilla. For variation add crushed peppermint candy, or ½ teaspoon of peppermint extract instead of the vanilla; for a fluffy sauce add whipped cream.

Aurora, Nebraska.

Velvety smooth honey chocolate ice cream—doesn't it look good?

XUM

Romance in Beekeeping

Morley Pettit

In the Hurly-burly of Trying to Make a Living We May Forget Romance

This story is inspired by Walter H. Hull's article about buying box-hives and by a letter from an old friend, Ed Stewart, who keeps bees in Missouri, Louisiana, and the Red River Valley, following the seasons back and forth.

It was the fall of 1916 when I got the bug to raise package bees and was advised by that pioneer of the business, W. D. Achord, to start up in southern Alabama. I arrived in Mobile early in February, 1917, to look around. It was my first trip South and it was chilly, not warm as I had expected the South to be, so we went on to Florida. We found it warm and interesting there and honey prices were good, and sweet clover was in its heyday in Ontario, so package bees were forgotten until the slump came both in Florida and in honey.

This brought back the idea of package bees and I was advised to try Georgia. A rosy picture was painted of how one could pick up box-hives strong in bees and full enough of wax to pay for them. An old beekeeper was found who knew everybody and was willing to secure all the bee gums desired at a dollar each and twenty-five cents for his commission and trouble going around with me to collect them. All we needed was a Model T roadster with light stake body built on the back and we were ready to go. We drove many miles collecting a dozen here and a half dozen there and moving them to a nice place down by a swamp guaranteed to supply a honey flow from the first of February on.

Transferring Bees in Georgia

This was in January, 1925, and in February we started transferring. In the meantime, I had purchased cypress lumber and a friend let me use his machinery to make up the hives and frames. Only foundation, wire, and smokers were bought from bee supply people. We made all the rest. The method of transferring was simple, direct, and all over with in one operation. The new hives were all ready with some frames of foundation and some unwired. Other material used were smoker and veil, long tools for prying and scraping made from old auto springs, hammer, butcher-knife, and string or rubber bands cut from inner tubes, and a bucket of water.

Unless there was enough nectar coming to prevent robbing we tried to choose days when it was just cool enough to keep robbers within bounds. A great deal of colony overhauling can be done down here on such days which are common all through the winter. The method is to remove the top from the box-hive with the hammer and pry as it will be nailed on. Then tip the box forward off its bottom-board keeping the combs vertical and leaving the exposed bottom just in front of the old entrance. Set the new hive where the old one was and arrange an alighting-board or cloth for the bees to be driven from the old hive to the new. Now blow smoke in the top of the box-hive and beat a tattoo on it with light hardwood sticks driving the bees toward their new hive.

They will take some minutes to fill themselves first and then travel. For the second hive a comb of brood from the first will draw them in much better. If and when you see the queen go in you feel more free about the next operation. I prefer to let them have their own queen, black and all as she is, until they become established and then requeen them later. The next job is to tear up the old hive, prying it apart at the corners and saving as much of the brood as possible. This is laid out on a hive cover and fitted into frames and tied there with string or rubber bands around the frame. Combs of honey may be put in frames in the same way, but some just "chunk the honey around the yard" and let the bees carry it in to help them draw out the foundation. If plenty of honey is thrown around and the day is cool and entrances are well contracted, there will be no robbing.

When you come back next week the scraps of comb can be gathered

up and the parts of the old boxes laid in the sun to soften the wax and then scraped, and a surprising lot of wax is secured. If you live by a fire place, as most everyone does down here, these waxy pine and cypress boards will make a beautiful fire. Then you look in your new hives and find the bees have fastened the combs in the frames and the strings and rubber bands, like the material used by surgeons for internal stitching, have been absorbed away. The queens will be laying and they are really keeping house.

Romance Almost Forgotten

In the hurly-burly of trying to make a living out of bees we almost forget the romance of beekeeping, the pure fun of accomplishment, the creative instinct and the wanderlust. After counting the whole cash outlay of collecting those box hives and getting them established in modern hives I found I was out about ten dollars per colony, with nothing for the time I had contributed, but it was a great experience and after fourteen years the memory picture remains clear.

And so comes another good letter from my old friend who does me the honor of claiming considerable inspiration from a series of articles written for Gleanings about fifteen years ago. He has told me how he operated over three thousand colonies for honey by employing help to open and close the hives while he did the expert examining, how he moved to Louisiana for the winter and a spring honey flow and then to Missouri, but now takes them clear through to the Red River Valley, to make a crop on the sweet clover. The ominous note in his letter is his remark that the sweet clover up there looks like it used to in Missouri. I expect it looks like it used to in Ontario. That is where the adventure and the hazard of the game comes in.

These beekeepers who go flying across the country with great truckloads of bees try to persuade their anxious wives that they are doing it to make more money. Perhaps they believe it themselves, but is it not the same spirit of adventure which prompted our forefathers to launch frail sailing craft on almost unknown seas to seek their fortunes in the new world or to go trekking across the wilderness in covered wagons? What beekeeper driving along strange roads does not subconsciously say from time to time, "There would be a good spot to set some bees"? And when he does occupy a new location, with what a thrill he visits that yard later and finds it prospering, or with what optimism he looks forward to "next year" when it fails.

And so the more beekeeping develops the more it becomes a great fascinating adventure even if it does wear us out and bring grey hairs to our wives.

RESOLUTION FAVORING AFFILIATION WITH STATE ASSOCIATION

A Resolution in favor of all Ohio county beekeepers' associations, affiliating with and becoming a part of the Ohio State Beekeepers' Association.

Be it Resolved: By the officers and members of Muskingum Valley Beekeepers' Association in regular meeting assembled that we do affiliate and become a part of the Ohio Beekeepers' Association as herein mentioned.

And be it also resolved that we accord the same moral and financial support as is customary in similar State Organizations. Our dues not to exceed fifty cents per annum, per member, unless increase is for a specific purpose and accepted by a majority vote of our membership.

That we shall also have representation and voice in all State meetings and conventions, elections, etc., on equality with every other county in the State, the same to be based on membership of the several counties or of each county.

We hope that all other counties and community associations that have not already done so will follow our action immediately so by the time our State Regional or Field meetings are held this summer we will indeed have a comprehensive and truly potent State Association.

And be it further resolved that we do not forfeit our right to elect our officers and to direct the affairs of our county association so long as we do not conflict with the Ohio Beekeepers' Association and the American Honey Producers' League, and that we may also withdraw from the above named associations for rea-

(Continued on page 463)

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From the Field of Experience

THE INDIAN MEAL MOTH, A HONEYHOUSE PEST

C. H. Gilbert
Associate Research Agriculturist at University of Wyoming

True wax moths, so often serious pests in apiaries and honey-houses, are not found in the vicinity of Laramie, Wyoming. They have probably been introduced but are unable to survive under such unfavorable environment. They are sometimes found in the lower beekeeping regions of the state but damage is confined to stored combs.

Here at Laramie stored combs are often badly damaged by the larvae of a small moth which is usually not regarded as a wax moth. The larvae

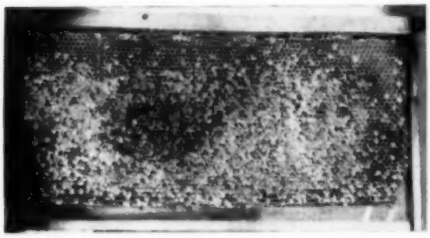

Fig I.—A comb damaged by the Indian meal moth.

of this moth may become very active in stored combs during the summer months or during the winter if combs are stored in a heated room. Combs are not damaged if they are stored in unheated warehouses during the winter.

The moth, *Plodia interpunctella* (Hbn), commonly called the Indian Meal Moth, is quite distinctive in appearance and can be readily distinguished from the true wax moths. It is approximately $\frac{5}{16}$ of an inch in length, is pale gray except for the apical two-thirds of the fore wings which is metallic coppery. The marking of the fore wing is striking and the moth is easily recognized by it.

Under favorable conditions breeding continues throughout the year and the life cycle requires from four to five weeks. The insect develops so rapidly that it may become a very destructive pest. The larvae normally feed upon dried fruits, cereals, and nuts. Because of the wide range of food the insect has been carried through commerce to all sections of the country. They are so widely distributed they may cause much of the damage credited to the true wax moth.

Last winter a brood comb was left in the basement of my home and in a short time, moths were flying about the house. The comb, badly damaged when found, was destroyed but in a short time moths again made their appearance. There were no brood combs in the house, but a general search disclosed larvae in an open package of dried figs. Since the larvae usually feed upon dried fruits, I decided to see if they preferred this food to pollen found in brood combs.

A moth-proof cage was constructed and in it were placed six adult moths, a brood comb containing pollen, a few figs and dates.

Fig. II.—Nothing left of the figs and dates but the seeds and skins.

Frequent examinations were made and activity was first noticed on the brood comb. The moths seemed to prefer to lay eggs there and for a time ignored the figs and dates. When the moths became more numerous there was increased activity on the dried fruit. In time, the pollen was all consumed and the brood comb badly damaged as shown in Figure I. The figs and dates were also consumed and nothing remained but seeds and skins (Figure II).

Since the larvae of the Indian Meal Moth feed upon pollen in brood combs and may even prefer it to their regular diet, and since brood combs are badly damaged by them, they should be considered a pest of the honey-house.

Fumigation with hydrocyanic acid gas gives effective control.

Laramie, Wyoming.

WHO CAN BEAT THIS?

R. H. Kelty

E. C. Barnes of Michigan kept a colony on a scale hive during the season of 1938 that produced 737 pounds net of honey. The following is the daily record:

May	lbs.	June	lbs.	July	lbs.	August	lbs.
26	2	1	13	1	0	1	6
27	3	2	5	2	9	2	10
28	2	3	16	3	18	3	8
29	3	4	4	4	15	4	4
30	3	5	10	5	17	5	6
31	8	6	7	6	36	6	6
		7	4	7	27	7	5
		8	6	8	15	8	7
		9	18	9	10	9	4
		10	4	10	30	10	2
		11	18	11	28	11	0
		12	5	12	20	12	1
		13	16	13	11	13	1
		14	14	14	15	14	2
		15	11	15	19	15	0
		16	4	16	23	16	0
		17	4	17	5	17	2
		18	10	18	12	18	1
		19	16	19	20	19	1
		20	16	20	4	20	2
		21	12	21	12		
		22	10	22	10		
		23	23	23	10		
		24	12	24	10		
		25	6	25	11		
		26	1	26	9		
		27	5	27	0		
		28	9	28	5		
		29	21	29	10		
		30	12	30	12		
				31	0		

This colony made one super on fruit bloom before it was put on the scales May 26. When put on scales it weighed 161 pounds. After September 20 the colony weighed 125 pounds. The 16 full-depth supers extracted 737 pounds net. The queen was a '37 queen wintered in two brood chambers; had about 10 frames of brood at beginning of dandelion bloom. Notice that the first three weeks in July, or in 18 days, it gained 346 pounds.

NO DRONES MEAN HARD TIMES AHEAD

K. C. Bose

In this country of perpetual summer, bees fly every day all the year round. Mine are kept in two-story (brood chamber and full-depth food chamber) hives all the time. Brood rearing, too, goes on continuously throughout the year only the quantity of brood varying with the season. I aim at a full brood-nest just before the nectar flows commence so that there will be plenty of bees in working trim to harvest the crop and not bees raised on the crop. In the off seasons the perpetuation of the colonies, after making sure that they are well provided with sufficient stores, is left to the fine reasoning of the control bees.

Some time ago, I happened to be particularly busy at work away from home and the home apiary and was thus prevented from looking into the hives as often as I usually do. It was just after the short rainy season and the bees were preparing for the small honey flow, when a beekeeper from a neighboring village called to see me and requested that I give him some drones. Although the drone's usefulness, as is so well known, lies in only one direction, this seemed to me so unusual a request that I could not refrain from asking what he wanted them for, to which query he replied that he had a few virgin queens in his apiary, but on account of there being no drones they could not get mated. "With pleasure you may have them," I assured him and proceeded to open the first hive feeling confident that I could give him all the drones he wanted from this one; but although there were ample stores in the food-chamber, not a drone was seen there, neither was there any in the brood chamber. Surprised, I closed this hive and passed on to the second one with the same result. This search was continued through all the other hives, still not a drone could be found, nor was there drone brood in any stage.

I knew that the drones were gotten rid of by the workers on the approach of winter in cold countries, but had never before seen a hive entirely devoid of them in this country. It so happened that during the short honey season that followed there was very little in the fields for the bees to gather and they did not even get

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enough stores to carry them through the long wet season at the end of which the major or real honey crop of the year is secured. Instead, during the rains they had to be fed.

The bees, therefore, must have known beforehand that they would not be rich enough to support any idlers and so, not only got rid of those in the hive but refused to raise any more.

Demerara, British Guiana.

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GETTING RID OF SKUNKS

A. F. Mead

I think I have a much surer and safer way than using strychnine to get rid of skunks, as recommended in May Gleanings. A skunk will scratch on the front of a hive and when the bees come out will eat the bees. No matter how many hives you have in your yard he will come back to the same hive for his next dinner.

When you find a hive with the ground in front nicely scratched and cleaned by a skunk, set a trap (I always use two traps to be sure of him) at the entrance and cover with just a little loose grass and next morning you are almost sure to find him. Fasten the ring of the chain of the trap to a stake driven into the ground just enough to hold the skunk but light enough so you can easily pull it up. Fasten a rope or wire to the trap ring so you are not obliged to go near the skunk. At the end of the rope you can pull up the stake and haul the skunk over the ground as far as you please away from the yard or house, then invite some kid to shoot him. By working slowly and carefully over rough or weedy ground there will be no scent until you kill him.

If you have a stream or pond of water near, draw the trap and skunk into the water and drown him.

If you want him killed with a club better get someone to do it for you.

Battle Creek, Mich.

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HOW TO FOOL ROBBER BEES

A. N. Norton

I have spent over 20 years in trying to figure out the best method to combat robber bees. In my operations, they are about my worst problem. The best plan I have found yet to protect weak colonies from being robbed is to put an inner cover underneath the hive and let the bees use the hole in the center of the inner cover for their entrance. They soon learn to go out and in and it seems to baffle the robbers to have to go back to that hole and find their way in and out.

This past season I put up nuclei in that way and they were not molested when if they had been in hives with the regular entrance they would have been robbed out promptly. This last fall I found a queenless colony that was being robbed. I gave them a ripe queen cell at the time and put an empty hive body on the bottom board with an inner cover on over it and the colony on top and it baffled the robbers. The next time I examined the colony it had a young laying queen and all was well.

Laurel, Montana.

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DO YOU? I DON'T

C. H. Pease

Do you locate your hives in the shade to prevent overheating during the hot days of midsummer? I don't. I mentioned this shade vs. sunshine matter in the May Gleanings, but had no idea then that others were experimenting along the same line. However, since that issue went to press I received literature from a manufacturing concern advertising a hive cover purporting to accomplish exactly the same result that my covers do, but in a different way. By comparison, I believe my covers are fully as efficient, if not more so, than the manufactured ones, with the added advantage of being lighter, less clumsy, and easily made by the beekeeper in a few minutes, at an expense of but a few pennies for paint, instead of throwing away your own covers and buying others at a dollar apiece plus transportation. Judging from inquiries I have received, I surmise that my description in the May issue was not as explicit as it should have been, so I will try to do better now. I neglected to state that the outside top of the metal cover is painted white in addition to the aluminum paint on the under side of the metal. This combination, according to the Government Bureau of Standards, is almost a perfect non-conductor of heat, but to make the cover still more resistant I laid one thickness of cellular board from merchandise cartons (which cost nothing) between the wood and the metal top

before the latter is nailed on, which in itself, with its numerous air-cells, is a most effective non-conductor. In the hottest days of full sunshine the under side of those covers is only warm, while the inner cover and the air-space between the two covers complete the insulation, and there is no time when the bees are driven out of the supers by heat. The cloth screens, mentioned in my May article, I have not used for two years.

In a sunny location, and with hives facing southeast, the early morning sun shining in their front door gets the bees out to the fields at least an hour earlier on cool mornings, which means a longer day's work and consequently more honey. The few colonies I have had in even partial shade have never averaged as good producers as those in full sunshine, and, as my average production per colony has been nearly double that of the average for our state, in spite of the fact that bee pasture is much better in other parts, I am convinced that full sunshine, with proper hive equipment (and that is important) is better than shade.

If you are skeptical as to the white top outside and the aluminum paint inside repelling heat, try this test: Take the metal tops off the wood of two covers, paint one white outside and aluminum underside; leave the other without painting, and put both in full sunshine on a still, hot day, side by side, white side up. After a few minutes place your hand on the underside of the painted one and then under the other. I'll wager your hand will make a mighty short stay on the second one.

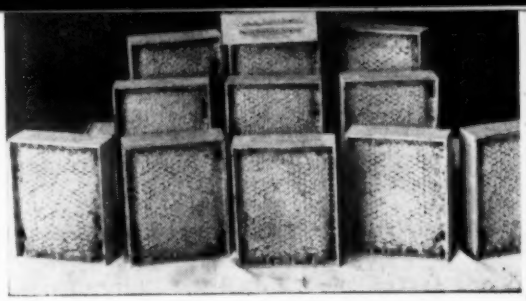
Do you put out your comb honey with stained or discolored section tops? I don't. My sections are as clean on all four sides as when they came from the factory, and every one is plainly stamped with the fol lowing inscription:

MADE BY "PEASE'S BEESES"
Mount Peasgah Apiaries
C. H. Pease, Canaan, Conn.

Do you use the old-style 4¼ square beeway sections in your comb supers? I don't. Mine are 4x5x1⅜ plain, for the following reasons:

First: Every super I handle gives me 32 sections instead of 24.

Second: I use top-bar section-holders, hung from the top, that keep the sections perfectly clean on all four sides and perfectly square; no paraffining and no scraping on tops or sides. A little cleaning on edges and corners gives the cleanest section in the world, with less work. There are no end stops, flat tins or cleats to bother with.



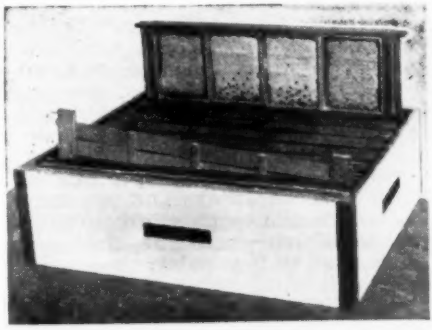
"Pease's Beeses" comb honey—4 x 5 plain.

Third: The bees have freer access to the sections through the slotted fences than with solid separators, which, as stated in the A B C and X Y Z of Bee Culture "has a tendency to reduce the size of the corner holes in each section."

Fourth: As quoted from the 1933 Root catalog, describing their "N" super (similar to mine) with top-bar section-holders: "The wide frames which surround the sections protect all sides including the tops, from propolis, . . . sections are easily cleaned, more sections grade fancy, and the oblong sections appeal to the buyer because of larger appearance."

Fifth: Last but not least, the 4x5 sections cost a dollar a thousand less than the old square beeways; also shipping cases cost less.

The old square beeway sections are claimed to have been "standard" since the beginning of comb honey production, perhaps 40 or 50 years ago. And so were kerosene lamps and the horse and buggy "standard" in those days, but I discarded all of them for what I believe is something better. "Am I right, or am I correct?"



The comb super that delivers all 32 sections absolutely clean on all four sides (no paraffining); showing "side passageway", also pollen-filled cells in two sections (result of no excluder). No end stops, flat tins or cleats.

Canaan, Connecticut.

XUM

THE HONEY BEE AS A WORLD TOURIST

Henri Meyer, Arnhem-Holland

Playing with bees, as some of your correspondents call the study of bee behaviour, is certainly a grand sport. In August, 1938, I received by ordinary mail at Arnhem-Holland three mated yellow Italian queens from a queen breeder in the southern part of Florida.

First of all, I will take my hat off to that queen breeder for his careful shipping method. These queens arrived indeed after a world's tour of some 6000 miles in first-class condition. This means that not only the three queens, but the two dozen attendant bees in each cage as well, were as fresh as if they had traversed the States by Pullman car and crossed the Atlantic nicely installed in a state room, instead of in the stuffy seclusion of a mail bag.

I may say that the success in long distance shipping of queens depends mostly on the quality of the candy in the shipping cage. Another factor is the age of the attendant bees. Young bees are O. K. after the first cleansing flight. Anyhow, having imported hundreds of queens from almost every part of the bee world, I have my doubts about the shipper if shipments after a transit of 10 to 15 days arrive with 50% of the attendants dead and the queens in poor condition owing to the candy being too soft or too hard. Of course, some allowance should be made for unknown incidents in transit. Extremes of heat or cold and foul air in the mailbag are deadly risks for the little tourists.

Well, on August 15, just before the blooming of heather, I introduced these three queens from Florida to established colonies, keeping the attendants separate. What should I do with these queenless and homeless travelers from a far sub-tropical country? What would they do in the realm of beech, oak, and northern pine woods at a temperature of 60°F. with the Florida sunshine, the tropical palms, and a balmy breeze of 90°F. still alive in their memory? Certainly here was a rare occasion to play with bees!

Assembling about 80 workers under a glass cover indoors, I marked all of them with quick drying aluminum paint on the thorax and introduced the party in the usual way to a mating box populated by a few thousand Italians and a ripe queen cell. The strangers were accepted without much harm and I think that nearly 70 Florida bees became citizens of the Old World. What interested me was how they would behave and how long they would survive under the new and very differing conditions of climate and flora.

The first few days I did not see much of them, but as soon as the new queen left her cell, the little colony started collecting pollen. The only source of pollen and nectar available at the time was a blooming heath at a distance of two miles. Do you think the Florida bees found that heath? They did. I saw many of the marked fellows return with the grey pollen of *Calluna vulgaris*. So they found their way to flowers unknown to them for many bee generations, as quickly as they located their new home on a strange continent.

What about the queens? Well, I introduced two of them to strong mating boxes and found eggs after three days. The third one replaced a three year-old queen in a strong colony and was safely liberated six days after removal of the old queen and the weeding out of a dozen queen cells which were started subsequently.

If Mell Pritchard could have seen the caged Florida queen 18 days after leaving the palmetto country he would have found her **dried up** beyond recognition. You will ask now to which extent this drying up may be disastrous to the ovaries of the poor creature. The queen answered this question in a practical way. Her egg machinery after a period of underfeeding of 18 days was **started suddenly and at full throttle** during a strong flow of heather honey. Within a week she had covered three new brood frames with eggs at the rate of about 3000 eggs per frame. Little chance the bees of that colony had to store honey in her brood department! Things were found O. K. at the last inspection in November and I feel pretty sure this queen will not be superseded before her ovaries are exhausted.

This case is not new nor exceptional. Every queen shipped by mail arrives at destination in a dried-up shape, whether the transit has a duration of three days or two weeks. I know that her qualities are not im-

paired by this. Queens seem to know how to dry up without harm. In poor seasons you may see them drying up in full colonies. And as soon as a good flow comes on, the small and underfed queen will grow to twice her former size. It is simply a case of stopping and restarting the egg machine when scarcity or abundance of fuel occur. Another case is the drying up of queens shortly before swarming. A queen swollen with eggs cannot fly and it seems reasonable that the bees stop feeding her lavishly to facilitate her flight. In some instances a queen dried up by lack of egg space will be induced to take a flight. I think this is the regular cause of queens deserting from mating boxes with a too small population.

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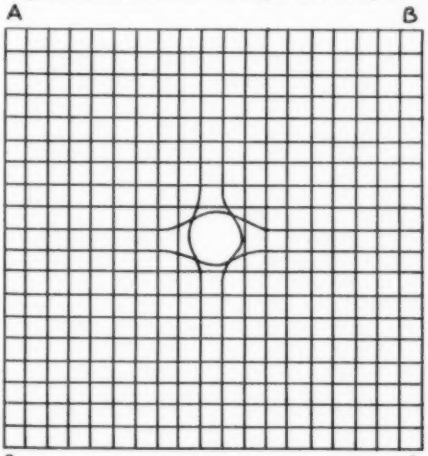
HOME-MADE INTRODUCTORY CAGE

G. H. Keen

I think I have found the simplest and easiest method of introducing a laying queen to a hive. The hive must, of course, be queenless—no laying worker or queen cells.

First of all, take a piece of fine wire gauze such as is used for making ventilated bee-escape boards, and



cut pieces 3½ or 4 inches square, as many as may be needed. Fasten in a vise a blunt punch, nail set or a ⅜-inch bolt, leaving a few inches projecting above the jaws.

Place the center of the square of gauze over the end of the bolt, set, or punch. Take opposite corners A and A in design, draw down, doing the same with B and B. This will form a cone-shaped cage. At the apex of this cone work a sharp-pointed instrument through to form a circular hole about ⅜ inch in diameter, being careful not to break any of the strands.

To use, open the hive to be requeened, de-queen, fill the round hole of the cage with crushed comb and honey. The more comb and honey that is used and the tighter it is pressed into the hole the longer the queen will be confined to the cage.

Place the queen in the cage without bees, twist the ends together and make bee-tight, suspend in the brood nest and leave the bees to do the rest.

This cage, I may mention, also makes a very efficient and cheap cell protector.

South Canterbury, N. Z.

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GET THAT WAX MOTH—EGG AND ALL

H. M. Krebs
State Apiarist of California

The common wax moth *(Galleria Mellonella)* probably causes a greater economic loss to the beekeepers of the United States each year than any other pest they have to contend with, with the possible exception of disease. This is quite true when all types of beekeepers are taken into consideration.

However, the wide-awake beekeeper no longer fears the wax moth or its destructive larvae, either in his colonies or stored extracting combs. He must take steps to protect the latter after removing them from the bees, else their destruction is quite sure to be complete and that in a very short time.

The purpose of this article is not to attempt to reach the careless individual, but rather to assist the careful beekeeper to a better plan of protection from this pest.

Three methods of protection are in use at the present time, but all of them have their drawbacks. Burning sulphur is dangerous from the standpoint of fire. I know of several disasterous fires caused by this method in which the entire honey-house and all supplies were destroyed. Sulphur fumes do not kill the eggs, hence more than one application is necessary.

Carbon bisulphide or "high life" has been used, but this is extremely dangerous from the fire standpoint

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as the gas is extremely combustible and an explosion may result from even a spark. It should never be used inside a building, and like sulphur, does not destroy the eggs.

Cyanogas has also been used, but is extremely dangerous from the standpoint of the user, especially in damp weather. It doesn't kill the eggs, but may kill the user as its action is very fast.

There are two new chemicals that have been tried and both have been found to be more efficient than any of the three listed. Both of these require only one fumigation each, as either will kill not only the moths and the larvae, but the eggs as well.

Either of these insecticides require the use of a comb storage room that has been made as air-tight as possible, but usually such a room is already prepared for use with any of the three generally used. A small electric fan is advisable for air circulation for quicker action, although it is not a necessity.

Chlorosol

Chlorosol is a liquid that boils at 170° to 175° F. From this it will be seen that this product will not evaporate very fast at normal temperatures, hence the suggestion that a small fan be used. Also, since it evaporates slowly, it gives the person using it plenty of time to get out without any great danger to themselves.

The gas from this product is heavier than air, therefore it should be placed in open pans on the top of the piles of supers. One gallon should be used for each 1,000 cubic feet of space to be fumigated. This strength kills everything with which it comes in contact including the eggs of the wax moth. The gas is non-inflammable and so is not at all dangerous from that angle.

Cholorosol can be purchased as such under that trade name, or if you prefer, you can purchase the ingredients and mix it yourself. It is made from three parts of Ethylene Dichloride and one part Carbon Tetrachloride. The latter is a regular fire extinguisher. This chemical is one of the easiest to apply with no danger of fire, kills eggs and all at one time, hence requires only one application, and due to slow evaporation is not very dangerous to the applicators.

Methyl Bromide

Methyl Bromide is the greatest insecticide in use at the present time. It will creep into any and every crevice no matter how small and kills everything with which it comes in contact in the insect world including eggs. However, it does not injure plants or other such types of life, but will quickly exterminate rats and mice or other types of vermin.

Methyl Bromide comes as a colorless liquid under pressure in one-pound cans or ten-pound cylinders. It boils at 40° F., hence evaporates almost at once when the can or cylinder is opened to the air. It is therefore much quicker in action than Cholorosol and the applicator must apply and vacate the room at once, although its action is not to be compared to the quick action of cyanide on a person. It is very easy to apply, as all that is necessary to do is to open the container and quickly throw the contents in every direction in the room with a swishing motion in the case of the can. In the cylinder, simply open the valve until the proper amount is used and spray in all directions from the nozzle. One pound of the product is all that is necessary to use for each 1,000 cubic feet of space.

Methyl Bromide is non-inflammable and there is no residue left no matter if some is sprayed on the combs. It is perfectly safe to use from that angle. The gas is heavier than air, hence it should be thrown or sprayed upward when released.

Either of these products are so much safer than any of the old systems of fumigation, that they should be given consideration by the beekeepers. There is no danger from fire or explosion and the applicator himself is much safer than he is when using cyanide.

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THAT JUNE GLEANINGS

C. M. Isaacson

The first article in the June issue certainly contains some very good pictures as well as interesting and informative text. That May 24 snow scene is a good deal later than any we have experienced here but we have had the bees in fifteen inches of snow as late as May 6.

Naturally Mr. Rowland's suggestion of breeding towards a non-

swarming strain is good, but I imagine considerable difficulty would be found in realizing the absolute goal, mostly because of the very complex heredity of the honeybee and the fact that swarming is an inherent characteristic, not of the individual colony, but of the race. Some years one may think that he has a **non**-swarming apiary and then the very next year, for no apparent reason, a frenzy of swarming attempts may develop.

Which brings us to Mr. Killion's comment (on page 359) that the swarming fever can be actually useful. Would a **completely** non-swarming bee be desirable—might it not be at the sacrifice of vigor? As he says, a colony which has been through the swarming stage does work remarkably well.

Mr. Miller gives us a very "meaty" article on swarm control (page 352). The Demaree system he advocates has always proved very good with me, and in a long honey flow results in some enormous colonies when the second brood nest turns into bees.

As sometimes mentioned, if a queen cell is given (or left) the raised brood when Demareeing, and the top super staggered, in a month's time a young laying queen will often be found. Her ease of introduction below needs no comment, and when once done, swarm control examination is ended for the season as well as the colony being requeened for next spring. It does not work equally well all years (although with me it has been very successful) but is very good when it does.

Regarding the piece on winter brood rearing (page 366) I have never made any intensive experiments such as Mr. Rahmlow mentions, but I have taken careful notice of the condition of cellar wintered bees. In the great majority of cases when I find a weak colony on early examination, I also find sealed brood. The stronger colonies seldom have any brood started until after removal. Others may be able to draw a different conclusion but as far as I am concerned, I believe winter brood rearing to be bad. In a milder climate or with outdoor-wintered bees the reverse may be true as far as I know.

Mrs. Nielsen's food articles are always good. They should go a long way in promoting a wider use of honey among beekeepers themselves, but why does she have to bring in so many "painfully" (when we haven't them) good dishes? Be as easy on us as you can—with your cherry pies especially.

On page 362, C. H. Pease gives an interesting method of distinguishing between extracted and comb honey colonies. For several years I have used a somewhat similar method—by painting the queen excluders blue so the extracted honey colonies can be seen easily.

When using a queen trap on the entrance some years back, I always noticed a lot of pollen "packs" (from the bees' legs) below the entrance so the wire guard must have interfered this much anyway. But why use a trap at all, Mr. Pease? With clipped queens and the Demaree method of swarm control or modification, you don't need any. It may be conditions prevent you from using this way to best advantage, though. I know nothing of your locality.

Thanks to Ben Edgerton (page 362) for his warning on Cyprians. A few years ago I had some Caucasians who seemed to me to be large cell producers—I counted between 30 and 40, but 196! ! — I certainly will steer clear of Cyprians.

I agree heartily with Mr. Stuyvesant in his comment on page 364, regarding the carbolic acid method of removing honey. I am too afraid of what the name will do to uninformed people. Why go to the trouble of calling the chief bee disease only by the initials AFB, and then risk hurting the reputation of honey with the buying public by the ugly name of carbolic acid?

The editor mentions on page 368 that the bees seldom use for flight the ventilation openings made by staggering supers. In my apiary they do not in front of the hive but very often in back—in fact every fall when removing supers, I have trouble with a lot of bewildered bees who cannot understand where their back door has disappeared to. Perhaps it is partly because I raise queens in the upper stories.

As a concluding comment I must thank the writer of the article, "The West Invites You" for the very interesting bits of bee history she includes. I am sure that some of our southern package men would like to have for just a little while the $100 per swarm price mentioned. But as the song says, that "was long, long ago."

Middle River, Minn.

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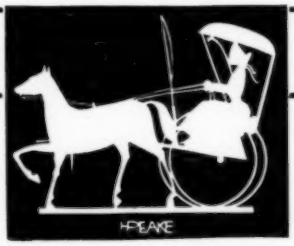
Spinster



Jane Says:

I remember what a thrill we got when we found the new queen, accepted and royally loved and protected, in our first package bees. She was a beauty, sleek and shiny, and the devoted workers tried their best to screen her from enemy observation, shielding her with their bodies and wings.

Our Own Queen

And now, with our own eyes we have seen another Queen—this time our own Queen Elizabeth,—accepted and loved, and you, too, seeing her, can best judge of our emotion at the sight.

An Impressive Sight

Seventeen thousand school children were massed, expectantly waiting, their hearts fluttering, perhaps as much as did the flags they carried so proudly, their sweet child voices raised in patriotic song.

"Here they come!" we heard at long last, and amid booming rockets, cheering, shouting, and "God Save the King," the royal company rolled into view. The cars circled the arena that all might see, the children breaking ranks and scurrying to the very wheels of the royal car to get a closer view of the King and Queen, coming to them from across the seas.

"God Save the King," will mean much more to them now than a mere song.

We looked upon the young king and thought of the cares and responsibilities resting upon him. We looked at the Queen and were glad that so charming a lady had been transformed into a royal personage. Chosen outside the ranks of royalty for love alone, elevated to the highest position in a great realm, and graciously accepting her share of onerous public duties, we must take off our hats to her, and to the King, wise enough to choose so well. Long live the King! Long live the Queen!

Bees and Humans

And how like the bees are we humans! Surely the honeybees have a wondrous deal of instinctive wisdom.

A colony of bees is a miniature democracy. All are equal with equal privileges,—all who are willing to work. Each has her own special work alloted her, and though the queen-bee, the reigning queen, may be given special attention, she has no special privileges. Her work must be done or the bees will have none of her. They rule the hive. The queen, though loved and revered, does not make the laws, nor allot the duties. She is the force holding them together, the force spurring them on to greater effort. They guard her from observation, fearing enemies. We guard our Queen, but not from observation. It is not a human trait to hide anything except guilt and wealth,—beauty is exploited.

Bees as Well as Humans Need Guidance

Bees, if left entirely alone, would eventually deteriorate. They would continue rearing queens to supersede worn-out queens from among themselves until the race ran out. To prevent this, apiarists have studied and experimented, and now we learn that humble worker embryo, placed in a queen-cell, and put on royal food, becomes a queen in every way.

Many a royal house has deteriorated in just such a way. The introduction of new blood means a strengthening and a renewing, as much so as a blood-transfusion to the weak or anemic.

We honor our King but we feel that his Queen, and ours, must wield as great an influence as he in strengthening ties of empire, binding us together. The addition of Scottish blood must add the rugged, honest worth of the Scot to the world-wide known best qualities of the British

The good queen-bee ensures a good colony. The good Queen, a great nation. Luckily no King who is on the job, can ever become a drone.—Spinster Jane.

Editorials

It is too early at this writing (June 9th) to forecast what the crop will be. In April there were copious rains. This was followed by a dry period in May. Late rains in the clover belt during the fore part of June have given us hope of a light to normal crop. Prices should begin to stiffen up.

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Our Last Chance As announced in our last issue, page 369, we urge that those beekeepers' associations that have not done so, write to William L. Austin, Director of the Bureau of the Census, Washington, D. C., saying that you approve of the recommendations made by the Advisory Committee of the Census to include in the 1940 Census hives of bees in cities and towns as well as those on farms. As this may require additional funds, write also to your senators and representatives urging that they support the matter before the Committee on Census of the House and likewise before the Committee on Commerce in the Senate.

This is our last chance to get reliable statistics on bees and honey. The former figures have been grossly misleading and worse than worthless.

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Premature Supersedure of Queens The veteran queen breeder, Mell Pritchard, whose methods have been adopted all over the country has this to offer on why so many queens are superseded right in the midst of the season.

Mr. E. R. Root: You have asked me several times what changes have been made within the last few years in our methods of queen-rearing. The most definite change is in our way of growing cells. About three years ago there was considerable said about premature supersedure of queens and I started making a study of the cause.

I came to the conclusion that lack of vitality on the part of the queens was the one cause and that lack of pollen while the larvae in our queen-cells were being fed was the cause of this weakness.

We had been getting our cells built in strong queen-right colonies. We used every means to make these colonies breed up fast, and there were often 15 to 20 frames of brood in some of them.

Now then, I find that it requires as many pounds of pollen to feed a frame of brood as it takes of honey. We can feed syrup in place of honey but have not found any substitute for pollen.

I changed my method of growing cells by having them grown in a strong colony that had the queen and all the unsealed brood taken away so as not to draw on the pollen reserves. Only the larvae in the queen cells had to be fed on this pollen. A frame of pollen was supplied when the grafted cells were given to them and there is usually a little pollen coming in, even during a dearth of honey.

This has resulted in getting the cells built larger and being fed liberally and the virgins are the kind that we want to get. These queens will not be superseded too soon.

Before we made the change I had batches of virgins that were so weak that many of them died in the cells and those that managed to get out were logy and failed to introduce into the nuclei. We do not have any of that kind now, and I have not had any of our queens superseded before we might expect them to be.

Note this, that the brood is taken away in order that the nurse bees, full of pap, may feed the larvae for queens a full balanced ration.

Mell Pritchard.

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Clarification by Sedimentation The clarification of honey by the use of artificial heat, while it facilitates the process, is too often attended with danger especially on the part of the beginner beekeeper. Dr. E. F. Phillips has very properly stressed this point in his articles in this journal for March, page 146, and April, page 221.

In this issue, page 418, Lloyd C. Gardner, one of our largest producers, shows a method of sedimentation that avoids all danger and at the same time eliminates the messiness of strainer-cloths. What is of considerable importance, the virgin flavor of the honey is retained. We especially commend it to large extracted honey producers.

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Honey Cleaned Up in Some Areas,—So What? It is noted from reports that in some sections of the country the market is bare of honey while in others there may be some carry-over. What are the honey consumers in these areas where honey is cleaned up going to do for honey until the new crop comes? Unless honey is shipped in they will have to turn to sugar or some other sweet and they may forget to turn back to honey when it is again available.

What if the entire crop is not cleaned up before the new crop comes? It wouldn't be such a dire calamity. Properly ripened honey has keeping qualities, in fact, it is

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one of the few foods that does not spoil easily. We are not yet assured of a normal 1939 honey crop in the North. We will not know what the 1939 crop will be until it is in the cans. Good 1938 clover honey, some of which may be carried over, may yet come in handy.

Before our industry gets much older a system of shifting surpluses of honey from heavy crop areas to lean crop areas will have to be worked out in order to supply the demand for honey in all regions. When that happens and when honey is given more publicity than it receives at present there may be no carry-overs and possibly production may need speeding-up to meet an increasing demand.

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In Union there is Strength Foulbrood legislation should be based more upon the needs of the fruit grower and the dairy interests than upon the requirements of bees and beekeepers. Without bees certain varieties of fruits cannot be raised successfully, and neither can the legumes yield seed; and when we mention legumes, we should have in mind not only alsike and red clover, but also sweet clover and alfalfa. Legumes in general are more valuable to the dairy interests than are other varieties of hay, such as timothy. Too often, when legislation is asked to control foulbrood, the beekeeper alone appears before the law-making body and bases his request for such legislation upon the interests of bees and beekeepers only. The fruit growing and dairy interests are willing to join hands with us if we will only let them **know** when we are asking for this kind of legislation.

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Nation's Food Buying Habits In the "Advertising Age," for May 15, 1939, page 26, there appears a comprehensive picture of what has been occurring in the food industries since 1920. Vegetables, dairy products, and fruits have accounted for the largest per capita increases while other food classifications suffered declines. It is interesting to note that sugar and syrup have made a gain of 4% while potatoes and cereal products lost 12% and 14% respectively. This at least augers well for honey, in view of the slight upper trend of sugars.

Four-H Honey Production Project We received recently from the Extension Service in Agriculture and Home Economics, College of Agriculture, University of Illinois at Urbana, a record book for honey production project, used by 4-H members. Similar projects are being carried out in some other states. This type of work should be encouraged and should have the hearty support of all beekeepers and those affiliated with our industry. We need more young trained beekeepers.

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Better Bee Stock Needed A new bulletin E-473 issued in May, 1939, by C. L. Farrar and C. W. Schaefer of the Bureau of Entomology and Plant Quarantine, in cooperation with the University of Wisconsin at Madison, Wisconsin, contains a preliminary report of work done to determine the influence of stock on supersedure, or loss of queen bees. Queens were received from 14 shippers located in seven states. Certain lines of stock were definitely inferior to others in quality and quantity of brood and the amount of honey produced. Only 49.3% of the queens survived the production season and only 27.9% survived as good queens.

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Another Warning Against Using Carbolic Acid in Removing Honey As we have pointed out before in these columns, the use of carbolic acid for freeing supers of bees if directions are not properly followed may lead to some serious results to the honey market, especially to bakers who use honey tainted with carbolic acid in their baked products. On this point Mr. Charles A. Reese, State Bee Inspector of Ohio, writes:

> This last season I warned our beekeepers to be very careful in the use of carbolic acid in removing honey, inasmuch as honey is of such a character that it absorbs both moisture and odors which can materially ruin a lot of honey by a little careless handling in removing it from the bees. As an illustration, a large baking concern contacted me one night early in the season to come to their bakery at once, as they had run into difficulty. They requested me to keep their name strictly confidential and you can probably realize the seriousness of the situation. When their bake for the morning delivery was being removed from the ovens, they found a strong predominating carbolic acid odor permeating their entire bake shop. The manager suspected the same might come from the honey that was

used in this particular bake, and was very much afraid they might lose their entire batch for that particular day. This would prove a rather serious situation. Fortunately the heat had driven off the odor and it did not remain on the bread, but investigations showed that the odor came from the honey used in the mix. While you would not detect if only upon heating, it showed the beekeeper had made some mistake in removing his honey from the bees with the use of carbolic acid.

Mr. Reese's caution is well taken and the beekeepers who have time to read this should carry the information to their fellow beekeepers who do not read bee journals. We have had so many complaints of how carbolic acid has been improperly used in removing bees from the supers that we feel almost inclined to say that the risk and danger to the market is so great that everyone should discontinue its use. We are not quite prepared to go so far as that yet, but if complaints continue to come in, the honey market will be damaged in a way that will discourage bakers and others from using honey that contains the least trace of a smell of carbolic acid. When heat is applied to the honey in the baking process the odors of this unpleasant smelling drug are released and become much more noticeable than when the honey is cold.

This is a reason why buyers are going to be very cautious about the honey they buy. We know one has said he will never buy any honey that is taken off a hive by carbolic acid. He says that while there is no appreciable odor from the sample it is quite sure to come out when the honey is heated.

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United States Has a Sweet Tooth

For years, 250,000,000 pounds of honey was the round number given as the production figure for the United States. Of late years, 150,000,000 to 175,000,000 pounds is nearer the actual amount produced.

In a bulletin, "Sugar and Molasses", recently issued by the United States Department of Commerce, we quote from a foreword by Alexander V. Dye:

"There is shipped annually into continental United States from all offshore areas sugar whose declared import value amounts to more than 250 million dollars. On a quantity basis, shipments averaged in recent years about 4.8 million short tons, or about 70 percent of total continental consumption requirements."

If a dollar's worth of imported sugar amounts to approximately 33 pounds, and if 175 million pounds represents the United States production of honey, then we have this regular startling situation: for every pound of honey produced in the United States, nearly 50 pounds of sugar are imported into the U. S.

Since the importation of sugar represents about 70% of the total consumption of sugar in the U. S., then for every pound of honey produced in the U. S., more than twenty pounds of sugar are produced in the U. S.

Looking at the total, for every pound of honey produced in the U. S., nearly 70 pounds of sugar are imported and produced in the U. S.

Instead of being a discouraging picture, it is an encouraging one. United States obviously has a "sweet tooth". Honey is a quicker energy food than sugar. Difficulty in selling honey today does not reflect overproduction but under-consumption, as has been pointed out so many times. More power to the American Honey Institute in its great work of persuading the people of the United States to use a larger percentage of honey!

In all the trials and tribulations in selling honey, producers must not forget that producers of other crops are having their difficulties too. A thousand commodities are feverishly begging for a place on the housewife's budget. Producers of milk, of eggs—producers of all sorts of products—are complaining that the price they receive barely pays the cost of production. Honey producers must not forget that they, with all other producers, are living in an era of economic change and unrest. Let us not lose our sense of proper balance.

One has only to read further in the bulletin above referred to, to see that there is a spirit of unrest everywhere. The shipments of sugar into the United States in 1938 were 6% under the 1937 figures, and the value decreased 20% from 1937. "Refined sugar exports to foreign markets decreased from 140,381,000 pounds in 1937 to 123,654,000 pounds in 1938—a loss of 17,727,000 pounds, or 12%."

It is another interesting observation that the exports of refined sugar from this country nearly equal the production of honey in this country.

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From North, East, West and South

NORTHERN CALIFORNIA, June 3.

Weather: There is very little for us to say about the weather more than the fact that from now on to late summer we will not look for rain. It may be later. We seldom hear the word autumn spoken. We did once and a beekeeper asked us if we were trying to be poetical. Our seasons run along so nearly alike that we are puzzled at times to tell just where we are, in the season, the entire year being so nearly the same.

Conditions: Whether it is the weather, the climate or something else, we have a condition that is difficult for any of us to explain. Here in the eucalyptus district it is usual for the blue gum, our best honey producer, to begin blooming in October and November and continue on until the best flow in February and March. 1938 gave us a heavy flow and few of us expected another in 1939. Notwithstanding this fact almost the usual number of bees were moved into the district. There was the usual blooming during the winter months which caused bees to build up and be ready for the expected February and March flow. When the time arrived there were some blossoms but very little nectar. Commercial beekeepers commenced to call for inspection and to move their bees to other fields. In fact, the field was limited but just about the time the moving was completed the trees began to show signs of blooming though not in the usual way but in spots on the trees. Very few trees had a perfect bloom. This gave the beekeepers new hope for a crop but again they were disappointed, for one day there would be nectar and the next no sign of any. The weather was all a beekeeper could wish but bees were not getting honey. Out of a week not more than two days were favorable for nectar.

Miscellaneous: This brought on another trouble. Bees were unusually cross. Beekeepers stormed our office telling us they had never had such cross bees and that colonies were swarming themselves to death. We have not had such a swarming season in the past twenty years. The bees produced a small surplus and since they have been moved to other fields where the flow is regular we hear hear no more about cross bees.

The upset condition of the inhabitants is another thing. They are demanding protection against bees. Several cities are considering laws that will shut bees out of the cities. We will see how it all ends. This is another good reason for beekeepers being well organized. Beekeepers must organize. The above is not the only complaint that is coming to the State Association. Fortunately no such complaint has been registered against a member but complaints have been brought against good beekeepers who should be members of the Association. These complaints include locating bees too near the road, schools, and farm houses. All beekeepers should join the Association and begin to think.

Prices: The price of honey is little changed. Beekeepers who are short of money are succeeding in selling for as good a price as was paid in 1938, in some cases a little better. A small crop and low prices are not encouraging. Conditions will likely be better before the season is over.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, June 1.

Weather: Cool weather continued until about the close of the orange bloom and then on May 25th it turned hot with the temperature up to 97°. This would be all right if the ground was well filled with moisture. As it is, the blossoms are of short duration and the scant nectar flow is cut short. The light rainfall and cool weather during the blooming period probably accounts for the very irregular and unsatisfactory bloom.

Market: Buyers are active and have been purchasing honey at slightly higher prices than were offered near the close of last season. Very little old honey is being held by the producers.

The Crop So Far: As predicted in our last letter, the orange gave a very light crop of honey this year, from ten to an occasional forty pound average with possibly a general average of twenty. Conditions were hard to understand. One could shake nectar from the blossoms and at the same time strong colonies showed little or no gain. The scale hive showed a ten-pound gain in the evening and only three next morning. One could shake a

cluster of buds apparently just ready to open and practically every one would fall off. Nectar was very thin and colonies were very slow to start capping.

In a few locations black sage yielded a little honey but over most of the unirrigated country colonies have built up well but to this date have stored little honey and some beemen only hope for a fill-up for winter. Alfalfa districts, like the Imperial and Palo Verde Valleys, are making a fair crop. With a very small carry-over, not to exceed 6%, and a very short crop, we are wondering if it will make any difference in the price we will get for the little honey we do get.

Most of the honey that made California famous in the early days came from the black sage ranges of San Diego County. Agriculture, fires and dry seasons have materially reduced the vast acreage of this shrub that at one time was so plentifully distributed over Southern California. The orange honey, a source of comparatively recent origin, has probably made up any reduction we have suffered on account of the failure of the black sage.

White sage and wild buckwheat, which we usually designate as June bloomers, look well and are just starting to bloom in considerable profusion. Had we gotten that three inches of rainfall we had hoped for in the spring all would have been lovely. It is almost too much to hope that we will get a crop from these sources.

Miscellaneous: All has been activity the past few weeks with the migratory beekeeper who moved his bees to the orange. Trucks loaded with two-story hives have been a common sight on the highways. Most beekeepers screen the hives and close the entrances when moving but here and there you will find a beekeeper who moves without closing. When the weather is cool this latter method works all right with the careful experienced beekeeper. But woe unto the fellow who is held up on the road or who has to unload on a warm night with bees three inches deep all over the hives and truck.

Weather has turned mild to cool again with high fogs in the morning that sometimes last until noon. This is very acceptable as we beekeepers feel that fogs are often a benefit to nectar secretion when the weather is not too cold. Grass grew knee high in and around many apiaries and to neglect to clean and properly protect your location is taking a big risk. A fire on a hot day with a wind to fan it can in a short time destroy the savings of many years.—L. L. Andrews, Corona, Calif.

BRITISH COLUMBIA, May 30.

Weather: After a mild winter during which the temperature dropped to zero for one night only, orchard men were afraid of a too early blossoming of fruit trees with resultant risk of frost damage, but cold frosty nights during the early part of April held back the buds and first cherries were not in bloom until April 21 when temperatures ranging in the eighties brought on all varieties of fruit very quickly with less advantage to the beekeeper than is derived from a long-drawn-out flow.

Bees were for the most part in good shape and filled up very quickly. Some such were noticed that had been wintered in single-story, fed three ten-pound pails of syrup at the end of March and still were practically devoid of stores on being set out in the orchards. These were given a full-depth super of empty combs and when removed from the orchards twelve days later both hive bodies were filled to the last cell with brood and honey.

Bees for Pollination: Bees are becoming more scarce in the orchard districts each year owing to heavier applications of lead arsenate in codling moth control and orchardists are becoming increasingly aware of the lack of bees as responsible for lighter sets of fruit. This is shown by growing interest in the rental of bees for orchard pollination at rentals ranging from three to four dollars per hive. The majority of growers still seem to regard bees as a free gift of Nature, and the beeman who charges rental and gets a honey crop besides, is an acquisitive racketeer.

As one man said, "The bees come to my place thin and go away fat."

Moving bees away from the orchards before spraying starts is a strenuous business as we move them to locations from fifty to seventy miles north to the alfalfa fields. The season here is two or three weeks later than in the northern location so these bees have the unique advantage of two overlapping flows from the dandelion. With bees strong so early in the season swarming is a major problem and we understand that bees on the Coast were swarming in April.

Crop prospects would appear to be good with bees and honey plants in excellent condition. Wild celery was noted as among the minor sources of honey in the North Okanagan.

The 1938 honey crop is not yet cleaned up and there will probably be some carried over to the new crop but prices have held up fairly well considering the large importations from other provinces.

XUM

Miscellaneous: Our first swarm of the season chose the nest of a magpie as its settling place and this thorny structure in a thorn bush called for a very cautious approach.

Helped by a good price for seed, a much greater amount of alfalfa is being left for seed this year which will help the bees in such favored locations.

Revised by Mr. A. W. Finlay, the Provincial Apiarist, a new edition of the bulletin, "Bee Culture in British Columbia," has recently been published by the Department of Agriculture and should prove of great value to local beemen and beginners alike.—G. F. Pearcey, Kelowna, British Columbia.

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TEXAS, June 1.

Weather: The weather for May was a continuation of the long drouth which has lasted for a year. The total rainfall at San Antonio from May 24, 1938, to May 24, 1939, was ten inches. Between the 24th and 31st, heavy local showers throughout the southern half of the state have relieved the situation immensely. The northern and eastern sections have received their normal quota of rainfall.

Crop: The honey production has been very spotted and peculiar. In the Big Bend of the Nueces River several beekeepers report very heavy yields of guajillo-catsclaw. The Uvalde district, however, reports no crop. In locations in the San Antonio area quite heavy yields of mesquite occurred. These, however, were stored before the normal date of beginning of honey flow. In this part of the state which is normally a dry section all of the plants on which the beekeepers depend for their main flow came into bloom a month ahead of time and have finished their yield. Many beekeepers who took off their honey early now wish they had not done so as the bees throughout May have not been able to collect the daily needs of the growing colonies and in many cases feeding has been resorted to. Numerous beekeepers have moved their bees out of the state in order to find a locality where the bees might have a chance at a honey crop later. Just what will occur in the cotton section of Texas is yet to be found out. Due to the drouth and other adverse weather conditions there is not as great an acreage of cotton as in a normal year.

Miscellaneous: Whether or not there will be a second flow from mesquite over the portion of the state inhabited by that plant is still unknown. Many report that the new bloom tags are showing but every beekeeper is aware that a sudden rain may put an end to a honey flow in mesquite almost over night.

The stabilization of the honey market which has been brought about through cheap transportation shows very markedly throughout Texas. With little local honey on the market the price remains the same, as the growing demand for honey is supplied from surpluses coming from out of the State.—H. B. Parks, San Antonio, Texas.

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MICHIGAN, May 31

Weather: Southern and also northwestern Michigan have needed rainfall. Recent showers have helped. Clovers are behind the condition of a year ago. The spring has been late but bees have built up rapidly with plenty of reserve food in many colonies. The dandelion and fruit bloom flow was short due to the changeable weather.

Miscellaneous: Less than the usual number of package bees came into Michigan except for the commercial beekeepers who have been killing their bees.

The honey market has been quiet with no advance in price. It seems likely that there may be a small hold-over although several lots have recently moved out of the state.

D. P. Barrett has taken over the apiary inspection work and is getting his staff organized.

Michigan Honey Institute has recently distributed a window transfer and stamps boosting the sale of Michigan honey.

Many commercial producers are taking advantage of the honey market reporting service instituted by the Department of Agricultural Economics, Michigan State College. Each producer cooperates by furnishing information, confidentially, as to the amount and price of honey sold during the previous two weeks. He receives at the end of each two-week period the compiled information regarding total amount and average price of honey sold.

The summer meetings of the Michigan Beekeepers' Association will be August 2 at Hillsdale, August 3 at Ithaca, and August 4 at Traverse City. The Board of Directors expect to have important plans ready for announcement at these meetings and urges every beekeeper to be present.—R. H. Kelty, East Lansing, Mich.

NEBRASKA, June 2.

Weather: Had this report been started a week ago it would have been rather a pessimistic one. The usual spring rains failed to materialize; hot drying winds, accompanied by temperatures well up in the nineties, for several days in May, did considerable damage to wheat acreages and forced yellow sweet clover into bloom when it had reached a height of less than one foot. Then good rains over virtually the entire state broke our serious drouth. Tonight these notes are being written to the accompaniment of another good, much-needed rain. This moisture comes just in time for yellow clover and should mean much to the white clover which follows.

Condition of Bees: Bees came through the winter in splendid condition; little winter loss is reported. Favorable weather during dandelion and fruit bloom seasons permitted the bees to build up in fine shape. Under ordinary conditions, the honey flows stop for about two weeks after dandelion and fruit bloom, until yellow sweet clover begins blooming. This year, however, due to the drouth conditions, clover began to bloom about two weeks ahead of time; as a result there has been a continuous honey flow.

Crop Prospects: How much of a crop the beekeepers may get depends upon the outcome of the race between the bees and the grasshoppers. Hoppers are bad but these recent rains will produce more luxuriant growth. It's the beekeepers' hard luck that the hoppers express such a decided preference for clovers. Some poisoning is being done. Less of sweet clover and more of drouth and grasshopper resisting forage crops are being planted making it more difficult for beekeepers to find pasturage. Timely fall rains aided sweet clover along roadsides, producing an increase over last year. Some of the larger beekeepers, not content to take their chances with drouth and grasshoppers, have moved their bees into more favored sections of Iowa.

Honey Market: Movement of honey is very slow. Honey has stiff competition in low priced, highly advertised syrups. Little or no honey remains in the hands of producers; many have imported to care for local needs.

Miscellaneous: There seems to have been little demand for package bees this spring. This perhaps is due to small winter losses.

Farmers are coming to ask beekeepers to place bees in their clover. Evidently they realize they will get more seed with the aid of the bees. Such a state of affairs is fine for both farmers and beekeepers.—Benj. Nielsen, Aurora, Nebr.

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SASKATCHEWAN, June 1.

Condition of Bees: Bees came through the winter in very good shape with a winter loss of 23% for the province as a whole. Although weather conditions in the southern half of the province continued dry until recently, colonies built up better than they have done for several years.

In the northern part of the province colonies are, on the whole, much ahead of those in the south half.

Package importations were heavy this spring, and although we do not have definite figures on the number of packages imported as yet, we expect a total of about 20,000 packages were brought in. This is a substantial increase over any preceding year.

Wintered-over colonies and packages will give us a total of some 31,000 colonies to commence the season with this spring. Package shippers are to be congratulated on the splendid service they have given this year. There have been very few reports of any damaged shipments. Queens have also been more satisfactory than for several years past, and few replacements have been necessary. At the present time some queen loss is being experienced in colonies where a queen simply disappears for no apparent reason, leaving a good brood nest and an apparently thriving colony. The loss from this source is much less than usual, however.

Miscellaneous: From time to time we receive reports from beekeepers who forward money to shippers in the South and have been unable to secure bees or a refund. In every case this applies to a lesser-known shipper, and some shipper who almost invariably is offering bees at prices considerably below the average. Apparently it is still best to purchase from reliable dealers, but some buyers are slow to learn this lesson.

Clover is showing excellent growth throughout the province but rain is badly needed in the southern portions or it will commence flowering too early to allow the bees to take the best advantage of it.

Now that our King and Queen have paid us a visit, it will again be possible to get down to the serious business of beekeeping. With bees building up rapidly, packages will need their second brood

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chamber soon and wintered-over colonies will have filled the second brood chamber and be in need of a super.

Prospects: Clover prospects are such as to make us anticipate a good honey crop, but even a good honey crop will not remove the apprehension many are feeling about the present low honey prices, and the likelihood that they will not improve materially by next fall.

With one of the best products on the market, beekeepers still continue their unorganized efforts to compete with some of the most highly organized industries known.

With improved legislation to assist associations of producers now on the Dominion statute books, it is hoped that we will at last have more organization, to produce a more standard article and to market it in a more orderly fashion, at a better price.—R. M. Pugh, Regina, Sask.

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IOWA, June 3.

Weather: It is well that weather should be of first concern to honey producers for they are dependent upon weather at every stage of the game. It really is becoming evident that honey producers should be more keenly alert to weather and its influences upon colony activity and upon nectar secretion from the various plants. It is usually a matter of common observation that certain factors of weather wielded a certain influence after the results have been observed.

Conditions: Colony conditions in Iowa have developed extremely well throughout the spring and early summer. Many reports indicate that bees have enjoyed an unusual nectar flow from several different sources of plants not commonly considered of any material importance to honey producers. The spring conditions were wholly favorable for colony development and this permitted many producers to make increase who had not expected to undertake too much. The price of package bees had served as a deterent in the purchase of this commodity with the expected increase in apiary operations. Many producers did take advantage of the favorable spring and made increase within their own yards, either to make up winter loss or to establish new yards for expanding operations. Some of this increase came late enough that it was possible to use ripe cells either from queen supersedure or from swarming preparations. It is very fortunate that this type of increase was used by honey producers as it aided materially in the problem of swarm control. Colonies which were not thus divided proved to be quite a problem in the matter of swarming which was evident earlier than usual.

The favorable honey flow conditions of the early spring extended through late spring and early summer. It was interesting to note, however, that most of the plants came into bloom ahead of the normal dates—in some instances, 10 to 14 days. There has been an increased acreage in yellow sweet clover and this is becoming a honey plant of definite value to producers. The bloom yields at exactly the time when a dearth of nectar formerly existed, or between the late spring plants and the early summer plants.

The entire state has suffered from drouth with the total deficiency ranging very high. For this immediate vicinity the rainfall during this portion of the year is one-third normal. This is on top of an already accumulated deficiency of reserve soil moisture so that things are in a critical stage. Scattered showers occurred over most of the state during late May and early June. These were definitely showers and served only to replenish surface moisture and did not in any way influence the deficiency of reserve sub-soil moisture.

It seemed in the early spring that there would be a revival of the white Dutch clover, but the drouth which existed put an early end to prospects from this source. White Dutch clover in pastures was entirely out of the picture. It seems to be increasingly necessary to depend on the deep-rooted plants, such as the sweet clovers.

Miscellaneous: It has been interesting to observe a case of effort to increase the local consumption of honey. The results of this particular case have been so highly satisfactory that the experiments may become a permanent practice. Several interesting factors have come out of this experiment. It is possible to pack honey locally in such a satisfactory manner that the local trade will prefer it to the so-called commercial brands of honey. The 5-pound pail has by far been the most popular pack for rural and semi-rural trade. The glass packages have not proved attractive. Extracted honey has proved fully as attractive as cut-comb honey. It has been demonstrated that a honey market may exist throughout the year overcoming the old idea that honey is a seasonal commodity. It seems that if the same principles of merchandising are applied to honey as is applied to other commodities that there can be established

a year round market for the beekeeper's product. There is a big potential market in the smaller towns or rural communities off the beaten path of the commercial distributor. These summary points tend to indicate the outcome of this experience.

The State Apiarist Report of Iowa for 1938 will be available in the immediate future and will be distributed only upon request. The publication this year features as the attraction a Manual for Beginners. This publication is free upon request.

There seems to be an increased interest on the part of producers to determine for themselves the possible fitness of various strains of Italian and Caucasian bees. There is an interest in the Carniolan race of bees, but this is rather difficult to procure, consequently experience with this race is being slowed up.

The honey department of the Iowa State Fair will be provided with new quarters for 1939. The management of the Fair has indicated their appreciation of the support of this department during the last few years by providing entirely new and extensive facilities for the probable growth of the department during the next few years. The premium lists are available and can be obtained by writing to A. R. Corey, Secretary, State House, Des Moines, Iowa.

There is renewed interest in moving bees into Iowa from other states. Most of the local producers are willing to cooperate with people who have found it necessary to move in order to obtain honey, but they do ask the cooperation on two points, that of respecting present apiary sites and respecting the possible complication due to disease. The State Apiarist's office will cooperate with anyone who wishes to locate bees in the state.—F. B. Paddock, Ames, Iowa.

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ALABAMA, June 5.

Weather: Conditions during the package season were about normal and all packages were shipped out on time. From May 15 to June 3 the weather was cloudy most of the time with scattered thunder showers so that the bees could work very little during this period. Niggerhead, horsemint, and sweet clover are in bloom now and with fair weather they should yield well as there is plenty of moisture in the ground.

Package Bees: Due to light winter losses in the North and the carry-over of honey the demand for packages has not been as heavy as last season. The shippers with a reputation for good quality and prompt service have had a good business. The price cutting of other shippers has not affected their business as much as it once did. It seems that the buyers have learned that they must pay a fair price to get good quality. Some complaints have already been heard of cheap packages proving unsatisfactory.

The demand for queens to this time has been greater than in the past. Most of these have been used for increase.

Miscellaneous: The price cutting in the package business has caused shippers to be cautious. None of them are making any increase. Many outfits are being offered for sale but naturally there are no buyers under present conditions. Some colonies are being moved into locations favorable for honey production. The supply of package bees in 1940 will be less than for several years.—Paul Cutts, Montgomery, Ala.

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ONTARIO, June 2

Weather: Following a long cool spell of weather that lasted during all of April and to the middle of May, with the exception of three very warm days in the early part of May, a change to unusually warm conditions rushed the fruit bloom and dandelions out so fast that at this date no blossoms of any kind except the hawthorn are visible.

This means a long dearth of nectar until clover yields, unless the spruce yields something to keep brood rearing going when it is so essential to insure strong colonies for the clover flow. Some years ago we used to worry about what to do with the honey stored as surplus from early bloom by strong colonies, but of late years our seasons seem to have changed and we are well satisfied if the bees get enough to carry them through to the clover flow.

Generally speaking, the weather has been quite dry in central and eastern Ontario with a heavier precipitation in the western counties, I understand. At present we need rain here in York and Ontario Counties and also in Wentworth County where we have some bees. Victoria County has had more rain and there the prospects are quite good for a clover flow this year, as compared to other localities where we have our bees located.

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Prospects: A small acreage of clover this year in York County looks well, and with rain in the near future it should mean a normal crop, but of course nectar secretion is uncertain and we can never predict with any degree of certainty what the honey crop will be. Prospects are not good for selling the crop if Nature blesses us with a good honey flow this year. No doubt there will be quite a lot of honey carried over from last year and from what I have learned lately this applies in particular to Manitoba and parts of Saskatchewan.

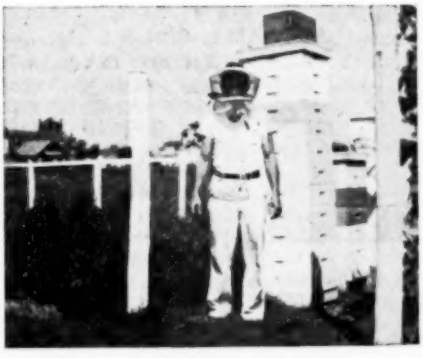
Just recently a car of honey was loaded for export at a point 15 miles from us and was sold at a ruinously low price. However, I suppose we will all go ahead and try to produce as much honey as we can and trust to luck or something else to sell the crop—indeed, I hear that some large producers are increasing their apiaries. On the other hand, Mother Nature may step in and say "enough" and a very small crop might cure all our selling ills.

Conditions: Winter losses have been quite heavy in many apiaries with little or no loss in others. More spring dwindling than usual, but well-wintered colonies are strong at this date, and on May 29 when the boys went to one yard to examine colonies, clip queens, etc., they found a big swarm on a small tree trunk —a nice (?) place from which to get the bees into a hive. But if no honey comes in for the next two weeks, some of our colonies will need feed to carry them through and I understand that other beekeepers are similarly situated.

Using Packages: About the usual number of packages came in this year and as usual we made up our losses with package bees. Whether it pays or not, we find this practice is following the line of least resistance and as we get older we are prone to lean that way. It saves a lot of work in making up nuclei, etc., at a time when we are very busy and all things considered we think it is as good as any other way to keep colonies up to the number required. After trying all known plans of placing package bees in hives we are back to our original method of placing the package in the hive with five combs with honey or syrup and leaving them alone for a week or more. Preferably this work should be done in the evening or on a cool day. Queens are released at once and usually we have no trouble. But we still have a too heavy percentage of queens that go wrong and this with us is the fly in the ointment when package bees are under consideration.

On page 366 Mr. Rahmlow refers to my criticism in a former issue of Gleanings, of his recommendation in regard to supplying combs of pollen to encourage winter brood rearing. For well over 30 years the writer of these notes has been sending in copy to Gleanings and other bee journals and I want to make this confession and say that we appreciate the fact that we have had no scientific training and that we left school before the teen age. No doubt this will be known by the quality of the stuff with which readers of this and other journals have been afflicted. But for many years we have kept bees for a living and one thing that stands out clearly is this: that for successful wintering in a climate where the bees often go for four months, and sometimes five months, without a flight, it is necessary that the bees have as little activity as possible. Winter brood rearing does not tend to bring about this desired lessened activity and on the contrary aggravates a situation that is bad enough without any stimulus. And actual experience proves to me at least that the quieter the bees can be kept, the less stores there will be consumed and the vitality of the old bees will be conserved, with the result that they will come through better than where so much brood rearing has been carried on.

At the risk of being called prejudiced allow me to say again that this spring once more, we find those colonies fed solid last fall and wintered in rather small brood nests, to be in the very best shape at present. No spring feeding to date while much feeding has been in evidence, and practically all colonies ready for the clover flow if and when it comes. —J. L. Byer, Markham, Ontario.



Neal Gundry of Michigan and part of his 10 colonies that produced 1980 lbs. surplus, mostly comb in 1938. He prefers golden bees.

Just News

The Ohio Beekeepers' summer regional meetings will be held Aug. 9, 10 and 11. Details regarding program will appear in the August issue.

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The summer meeting of the Wisconsin Beekeepers' Association will be held in Madison, on July 20.

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Madison County field day will be held in Anderson, Indiana, on July 29, at the apiary of Chas. Kelley.

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The Vigo-Clay Counties beekeepers' summer meet will be held in Terre Haute, Indiana, on July 29.

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The Virginia State Beekeepers' Association will hold its summer picnic on July 26, in Miller Park, Lynchburg, Va. This will be a basket picnic, and all Virginia beekeepers are asked to attend. An interesting program is in the making and a good time is in store for all who attend.—Henry W. Weatherford, Sec., Virginia State Beekeepers' Association.

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Two field meetings for beekeepers are planned by the New Jersey Beekeepers' Association for July. The first is a special one on Saturday, July 15, 1939, at which Dr. J. N. Tennent, President of the Scottish Beekeepers' Association, Glasgow, will be present. We will gather at the home of Miss Carrie Foster, on the Mendham road, one mile west of Morristown, N. J., at ten o'clock sharp. Dr. Tennent, Mr. Filmer, and Mr. Holcombe will speak. Bring lunch which will be eaten at twelve o'clock. At one-thirty we will go to Karl Rist's apiary, 294 Hillcrest Ave., Morristown, and examine the bees. Mr. Rist will demonstrate the foundation press. Spread the news and let's honor Dr. Tennent with a large gathering.

On July 22, 1939 the annual field meeting will be held at the State Apiary near Lebanon. Besides the breeding work in which Mr. Filmer is engaged, we will see the O. A. C. honey strainer in operation, the Brand Capping Melter, a gasolene-operated extractor, etc. It is planned to have Dr. Martin, Director of the N. J. Apiculture Experiment Station present. Also Dr. Headlee, State Entomologist and other state officials. Follow the red arrows from either of two points on state highway No. 28 east of Lebanon. Those coming via Flemington may follow State Highway No. 30 to a point seven miles north and follow red arrows through Round Valley to Lebanon then turn east, or you may go via Whitehouse. Bring lunch. Light refreshments for sale on the grounds.—Elmer G. Carr, Secretary-Treasurer.

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The Cuyahoga County, Ohio, beekeepers will hold their summer round-up on July 30 at the apiary of George Siedel, Strongsville. A cordial welcome is extended to all.

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W. E. Hawkins, aged 83 years, father of Kenneth Hawkins, of the G. B. Lewis Co., was killed by an automobile near his home in Plainfield, Illinois, May 11.

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The following has been received from J. M. Robinson: Office of the Managing Director of Marketing Agreement and Ordor for Handlers of Package Bees and Queen Bees, Auburn, Alabama; June 12. 1939.—To All Handlers of Package Honey Bees and Queen Bees: For your information, we show below copy of letter which we have received from Mr. John L. Wann, General Crops Section, AAA, Washington, D. C.—Very truly yours, J. M. Robinson, Managing Director.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Adjustment Administration
WASHINGTON, D. C.

Mr J. M. Robinson June 6, 1939
Auburn, Alabama

Dear Mr. Robinson:

For your information the Agricultural Marketing Agreement Act of 1937 under which marketing agreements and orders are issued was held yesterday by the Supreme Court of the United States to be constitutional and enforceable. These were the famous Boston and New York milk cases.

Very truly yours,
(Signed) John L. Wann
Agricultural Economist
General Crops Section

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The Lehigh Valley Beekeepers' Association, comprising Lehigh and Northampton Counties, Pennsylvania, will hold its annual field meeting Saturday, July 8, at 1:00 P. M., Daylight Time, at the apiary of Floyd Sandt, Wagner's Orchard, Easton, Pa. The program will include talks by E. G. Carr, New Jersey, "Queens and Their Habits;" Harry B. Kirk, Pennsylvania Department of Agriculture,

(Continued on page 457)

XUM

Heads of Grain from Different Fields

Prefers 10-frame Equipment

In his article "Production of Comb Honey", page 359, May, 1939, Gleanings, Carl E. Killion says "I recommend nothing larger than the eight-frame size super." He may not have experienced some of the heavy flows that I have known. I remember one season when the honey flow came on with a bang. I placed a super containing 40 sections over a strong colony. The bees moved right up and started practically every section at once and in a very few days were ready for another super. This is only one instance of many and I never made a practice of using anything smaller than a ten-frame super. A strong colony in a heavy honey flow means that the bees must have plenty of "elbow room" if they are to work to the best of advantage. Skimping bees on superage often may mean a greater or less loss of honey. It may be that Mr. Killion has never experienced the heavy honey flows that some of us have. In that case he may be right.—Moody Brenneman, Berne, Ind.

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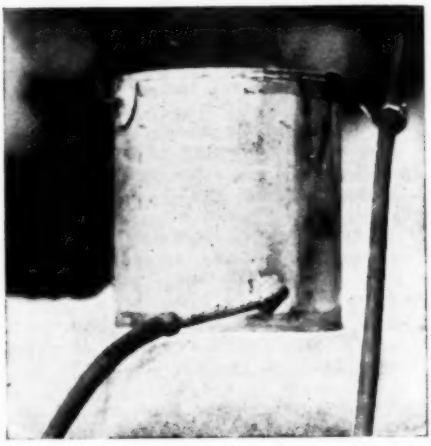
Section Moistener

To moisten the corners of sections for folding a common practice is to set 100 or more on edge with the V cuts in line and run a fine stream of water along the V's. One commercial producer rigged up a 5-pound honey pail after the manner shown in the picture, making use of discarded automobile accessories. It consists merely of the metal valve stem from an automobile tube fastened into a hole in the pail and the hose from a tire pump screwed on to the end of the valve, with a wire on the other end of the hose to hook over the side of the pail when not in use. Cut the valve stem out of the tube, leaving a little rubber around it. Remove the lock nut. Insert the valve stem from the inside of the pail and tighten the lock nut down on the outside. This makes a tight joint, no soldering being required. The valve itself, inside the stem, should of course be removed. This calls for a metal valve stem, many



This handy rig for moistening sections is made with the valve stem of an old automobile tire and a piece of hose from a tire pump.

of the tires now being made with rubber valve stems. Lacking a better rig, a can with a small nail hole punched in the bottom will serve, but not as well nor as neatly as the rubber tube attachment.—Walter H. Hull, Bath, N. C.

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A HONEY OF A STAND

Mr. G. F. Kneeland, Morrisville, Vt., has a simple yet attractive roadside honey stand. The vines offer an inviting background.

The Golden Jubilee Convention

Marie Whitcombe

Many of the 6,000 beekeepers in California will be in the receiving line to welcome their fellow honey producers at the National Beekeepers' Convention to be held this year from November 7 to 10 at Sacramento, the capitol city of California.

"For a long time I have been reminding beekeepers of this Fifty-Year Golden Jubilee Convention, and we are surely looking forward to meeting again our many beekeeper friends from far-off corners of the United States and Canada." So says Mr. Charles S. Kinzie of Arlington, and we know that his statement is the expression of the entire group of Californians who will be hosts at this worthwhile conclave.

Since Mr. Kinzie seemed so enthusiastic about this Convention, we decided to end our trail at his doorstep and ask him a few questions. One of the many nice things about this Chairman of the Board of Managers of the California State Beekeepers' Association, is that both he and his wife are ever glad to answer the foolish questions of roving reporters like myself.

They reminded me that this year California has the opportunity of showing a World's Fair honey exhibit to all of the visitors. It's really a dandy display and we'll all spend at least one day at Treasure Island and—but I forgot, I'm asking Mr. Kinzie about the Convention and the bee industry!

"Mr. Kinzie, what do you think will benefit the honey industry as a whole?" This is a highly controversial subject in all fields of agriculture today and I was anxious to hear what a honey man had to offer.

"That is a big question, but here is what I think. We want better prices for honey, but to secure this increase we must have better grades of honey. Every beekeeper should join his local honey organization, his state association, and both the American Honey Institute and the National Honey League. The many bee magazines are over-flowing with good ideas, and if we are to keep in step with new developments—and there is no dearth of progressive experimental work in this field—we must read them faithfully. We must support our government bee research stations, and above all, we must sell the public on the salubrious qualities of our products."

If every beeman had as many ideas as Mr. Kinzie and carried them out as faithfully as he does, we'd have babies crying for honey!

Mr. Kinzie then let me in on a very special secret. He has a collection of bee equipment gathered in 1890—that was the first year a national honey convention was held—together with pictures of the same era. He may bring these to the convention—and will your eyes open when you compare them with the equipment in our apiaries today. Who says beekeepers aren't progressive!

Mr. Kinzie has been in bees all his life, commercially for 40 years, and he is the sixth generation in the Kinzie family in the bee business. He and his wife are especially well known for their fine exhibits in the southern part of the state. In 1932, at the Tri-County Fair in Pomona, they staged the largest honey exhibit ever built in the United States. There were over 3,000 items in the exhibit and approximately five tons of honey! Every year, however, their exhibit is one of the highlights of the Fair.

"Mr. Kinzie, who is your best honey customer?"

He beamed and replied, "Mr. Perkins is my best honey customer. He's a bachelor and lives in Palm Springs and he eats 125 pounds of honey each year all by himself. Believe it or not. Mrs. Kinzie is a good customer, too—she uses about 300 pounds per year in her cooking, and can she cook!"

Of course, it isn't all work in the bee business, and I learned that Mr. Kinzie takes time out to see the humorous side of things too. I decided a very intelligent question would be, "Do you believe bees will change in appearance during the next twenty years?" His reply left me spellbound.

"Yes, I believe some Scotch beeman will cross bees with lightning bugs so that they will be able to see their way about at night and thereby gather nectar 24 hours of the day. That would be a great help down in the Imperial Valley where the days are so warm."

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Asked and

Answered

Pollen Storage

Question.—This year I put a shallow super under a colony in a large brood-chamber hive, also I put a shallow super under a late swarm. The swarm stored it's pollen in this shallow super. The other colony also stored pollen in the shallow super. Both the brood chambers were kept remarkably free of pollen. If this is "bee-behaviour", would not the use of a shallow super under each brood chamber solve the pollen storage problem? I intend to give it further trial next year.—W. E. Bumgarner, Mo.

Answer.—During the past few years we have tried out, on a small scale, Mr. Bumgarner's idea and it appears to work. Most beekeepers put the shallow super on top instead of under the brood chamber. Certainly ten standard combs and ten shallow combs contain more comb space for the storage of pollen than a single story standard brood chamber. We operate most of our colonies, each in two standard brood chambers which give ample space for pollen as well as honey and brood rearing.

AFB Spores Difficult to Destroy

Question.—What is the ability of spores of **Bacillus larvae** to withstand extremely high temperatures?—Mossom Deyell, Ohio.

Answer.—The only thing that we have published on the subject appears in the Report of the Chief of the Bureau of Entomology and Plant Quarantine, 1936, in which it is stated that "spores of this organism were viable in culture after having been boiled in water for 4 hours" and that "they were also viable after having been subjected to dry heat at 100° C. for 5 days."—Answered by Jas. I. Hambleton, In Charge Division of Bee Culture, Beltsville, Md.

Uniting Colonies

Question.—Can one colony be united with another by alternating the combs of brood with adhering bees of one colony with like combs of another colony, keeping the combs together in one hive?—Iver C. Anderson, Minn.

Answer.—Yes, and especially during a honey flow. This manipulation of combs appears to demoralize the bees in both colonies and they will gradually unite with little, if any, fighting. One of the queens will be retained and the other one killed. A few years ago we united twelve colonies of medium strength into six colonies by simply lifting one colony with bottom-board removed, on top of another colony. This was done during a light flow and no fighting resulted. We left a queen excluder between the two brood chambers of each of the united colonies. A week later, on examining the six united colonies we found the six queens above queen excluders alive and no queens below the excluders. Our theory is that the colony above each excluder had to pass down through the lower brood chamber to fly outside and in doing so, discovered the strange queen and killed her, whereas, the colony below not having much occasion to go above, did not discover the queen and did not attempt to do away with her.

Is Poison Stored in Combs?

Question.—Are there any records of poison from spraying, being stored in honey combs?—Richard L. Everit, Mass.

Answer.—Last year we investigated a case where a beekeeper in New England lost most of his colonies through nearby dusting or spraying operations—we suspect the former. He lost all but three or four out of 50 colonies and the following year, when he attempted to put new bees on some of the old combs, poisoning persisted and we were able to detect arsenic in the combs themselves. McIndoo and Demuth, 1926, found arsenic in the pollen in the hives of bees working sprayed fruit. They found no poison, however, in larvae or pupae and only mere traces in occasional samples of honey. We are not aware of any record of consequential quantities of poison having been found in honey as a result of bees working on sprayed or dusted blossoms.—Answered by Jas. I. Hambleton, In Charge Division of Bee Culture, Beltsville, Md.

Manipulation of Food Chamber During Honey Flow

Question.—I have my colonies in food chamber hives and I am at a loss to know just how to handle the food chamber during the honey flow. What have you to suggest?—T. L. Powers, Pa.

Answer.—When the food chamber (which is a shallow or deep super of honey reserved for winter and spring stores, in addition to what honey there may be in the brood chamber) was first used, it was kept on top of the pile of supers during the honey flow, then let down onto the brood chamber after supers containing surplus honey were removed. This method insured having the food chamber well filled, but it did involve considerable lifting of the food chamber, off and on the hive, each time supers were added. At present quite a number of beekeepers leave the food chamber on the brood chamber during the entire season and the hive thus becomes a double brood chamber hive. In the production of extracted honey the queen ex-

cluder is placed above the double brood chamber and super placed on top as needed. In some regions where there is no fall flow, or, where the summer flow shuts off rather abruptly it is an advantage to place the excluder above the single brood chamber at the beginning of the main honey flow so that the food chamber, placed somewhere among the pile of supers (not neccessarily on top) may be well filled.

Introducing Cells to Nuclei

Question.—When a queen is taken out of a nucleus can it (the nucleus) be given a cell at once or must we wait a day at least?—Iver C. Anderson. Minn.

Answer.—It is perhaps safer to wait a day after removing the queen, before introducing a ripe cell. However, some queen breeders introduce cells the same day queens are removed from nuclei. When queen cell protectors are used the latter method may be used satisfactorily.

Queen Excluders for Comb Honey

Question.—Is it necessary to use queen excluders in producing comb honey?—John P. Cole, N. Y.

Answer.—The general consensus of opinion seems to be that queen excluders are unnecessary in comb honey production, because queens seldom, if ever, go up into the comb honey sections to lay, especially when full sheets of foundation are used in the sections. If, however, inch starters are used in sections, instead of full sheets, the bees are likely to build drone cells which invite queens up into the comb honey supers to lay unfertile eggs in the drone cells. Some good comb honey producers do use queen excluders under comb honey supers. The nature of the honey flow also locality may have a bearing on the correct answer to this question.

Checking through Colonies

Question.—I have 20 colonies. How often should I examine the brood chambers during a season?—J. L. Rice, Ind.

Answer.—Colonies should be examined carefully in the spring as soon as the weather will permit to check on food, colony strength, and queens, also for disease. It is well to make another check just before supers are put on for the main honey flow. It may be necessary to examine brood chambers each week or ten days at the beginning of the flow until bees have passed the swarming stage. After they settle down to storing honey it is unnecessary to look into the brood chambers oftener than once a month unless one has reason to believe that conditions within the hives are abnormal. It is well to check colonies carefully in the fall before they go into winter quarters. It is unnecessary as well as detrimental to the welfare of colonies to examine them too frequently.

When to Take Off Honey

Question.—I am producing both comb and extracted honey. A neighbor beekeeper says he takes his extracting supers off soon after the combs are filled and before they are capped over. Can this be done with safety?—J. R. Morrow, Ohio.

Answer.—Extracting combs of honey should not be taken off the hive to be extracted until they are at last three-quarters capped over. It is preferable to have all combs entirely capped, if possible. This procedure will help to insure having honey that is properly ripened. If honey is removed from hives before it is properly ripened it may ferment because of the abnormally high moisture content. If you have enough supers to hold the crop it would be well to leave the honey on the hives until the honey flow is over. Comb honey should, however, be removed from hives just as soon as the sections are thoroughly capped over, to avoid having the sections travel-stained. If sections are left with the bees too long they are likely to become darkened by reason of the bees travelling over them.

Queen Cells Present After Queen is Introduced

Question.—After introducing a queen recently I opened the hive in six days and found the queen, also a few queen cells started which I destroyed. Is it common to find cells in such a colony?—J. A. Raymond, Iowa.

Answer.—A colony will sometimes start queen cells before a queen is released from her cage and occasionally the bees may not destroy the cells for some time after the queen is released. It would seem that the bees are not certain about accepting the new queen. Usually, however, when a queen is found released from her cage the bees will eventually tear down the cells being built. It is well for the beekeeper to destroy these cells.

Making Smoker Fuel

Question.—Quite some time ago I ran across a formula for using a solution of powdered Borax and water to soak burlap or other rags in to make smoke material. I made up a supply and used it and it was very satisfactory, but I have forgotten the proportions and cannot now locate the formula.—Ernest E. Cooper, Mississippi.

Answer.—It was not powdered borax, but saltpeter that was used to make a solution in which to soak burlap or other rags, which when dried could be ignited readily as a smoker fuel. The plan was originated by W. L. Coggshall, who died some years ago. He took old burlap sacks, rolled them in a long role, tied at intervals of four or five inches, and then chopped them into short lengths with a hatchet on a block. The ends were then dipped into the saltpeter solution and allowed to dry. This fuel, when lighted on the end covered with the solution, would ignite very easily, with the result that a vigorous smoke could be secured almost instantly.

XUM

Talks to Beginners

M. J. Deyell

Another Blunder

Not long ago I had occasion to introduce a young queen to a colony from which I had removed an old, worthless queen. Of late, I have been using a special type of cage called the Ideal introducing cage, made in California. It necessitates transferring the queen out of the mailing cage into this Ideal introducing cage. I usually do this transferring in the apiary house, close to the window, so that if the queen escapes from the mailing cage when I remove the wire screen, she may be easily caught on the screen of the window. Sometimes I do this transferring of the queen inside the automobile with the windows closed.

On this particular day I took a chance on transferring the queen out-of-doors. That queen was as quick as lightning. As soon as I removed the wire screen in the cage she slipped out through my fingers. I made a lunge after her, jumping up into the air to catch her but she disappeared into the ether.

Such an experience is rather maddening, especially when one pays out good money for a good queen.

In a previous talk I have mentioned carrying along water in a friction-top tin pail in order to dip the cage containing the queen into the water, so the wings of the queen may become wet so she cannot fly. Since losing the queen, also some others previous to the last one lost, I now follow the advice I am attempting to give with reference to using a bucket of water when one is transferring queens out-of-doors. It is necessary, however, to keep the queen cage submerged in the water until the queen is thoroughly soused with water in order to prevent her flying.

Conditions Thus Far

This has been a rather peculiar season in some respects. In April bees built up quite rapidly. We had a cold May in this section of Ohio and I believe this condition prevailed over much of the North. Normal colonies instead of building up rapidly as they usually do in May, were held back somewhat due to cool weather that prevented normal bee flight.

This proves to be a blessing in disguise because colonies were held back somewhat and did not reach their full strength too soon. Swarming was delayed. During the latter part of May and early June no signs of swarming were evident in this vicinity. Conditions may have been different in other regions.

At present (this is June 10) some nectar from yellow sweet clover and alsike is coming in and still there are no signs of swarming. It is possible, however, that when the honey flow actually gets under way strong colonies may build queen cells in preparation of swarming.

We have found that when colonies reach their peak of strength about the time the main honey flow starts such colonies rarely, if ever, swarm, provided they are given ample comb space, or supers, in plenty of time before conditions within the hive become congested.

In producing comb honey colonies are likely to build queen cells, especially if they have old queens. We have found that it pays to have all comb honey colonies headed with young laying queens at the time the main honey flow begins.

Anticipation

At this season of the year all beekeepers in this latitude are looking forward with great anticipation to the honey flow. Nobody knows what the future will bring. Quite often the unexpected happens. We may plan for a good honey flow and be disappointed. On the other hand, we may think that the season may be a failure and all at once something happens to change conditions in order to bring about a good honey flow. One thing that makes beekeeping so interesting is that we never know what is around the corner.

Plenty of Supers—In Time

Most of you readers remember the re-

cent article in the April, 1939, Gleanings, by E. R. Root, concerning the Pacific States Bee Culture Field Laboratory. Under the heading of "Nectar Concentration," Mr. Vansell, of that Station, brings out some exceedingly interesting facts.

The sugar content of various nectars shows a variation of from three to seventy per cent. The average sugar content of nectar is about 25% to 30%. If the average concentration is 30%, bees would have to handle 266 pounds of nectar in the production of 100 pounds of honey.

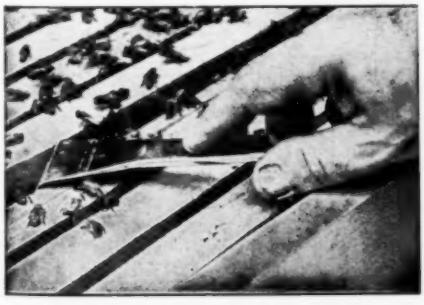
When one takes this into consideration it is easier to understand why ample comb space is so essential during a good honey flow. A great deal of the water content of nectar is evaporated by the bees and they need plenty of comb space for ripening the honey. When nectar is carried into the hive it is spread through the empty cells while it is being evaporated and later it is concentrated into less comb space as it is ripened.

Some years ago we failed to provide strong colonies with supers in sufficient quantity to take care of the rapid flow of nectar. This frequently resulted in swarming because there was congestion within the hives.

At present we often put on two deep extracting supers at one time. It is remarkable how quickly a strong colony of bees will fill a super during a heavy honey flow. It is safe to say that hundreds of tons of honey are lost each season because beekeepers fail to put on supers in time.

That First Taste of New Honey

All beekeepers are anxious to taste the new honey to see if it is any different than honey secured in previous years, also to satisfy that craving for the flavor which usually goes with honey directly after it is taken off the hive. We know that the demand for honey usually increases at the time the new crop begins to be harvested. It would seem that this demand is due partly at least to the enthusiasm of beekeepers in announcing their new crop.



A side twist of the tool affords a strong leverage by which the frames are separated easily and without jar.

Danger of Removing Honey Too Early

Beekeepers are naturally anxious to take off honey as early as possible. Some remove combs of honey for extracting before the honey is properly ripened. Honey taken off too early is likely to ferment. Extracting combs should not be removed from colonies until the combs are at least three-quarters capped over. Comb honey should not be taken off until sections are entirely capped. It is well, however, to remove comb honey before it becomes travel-stained.

How to Take Off Honey

Beginners with only a few colonies of bees can remove extracting combs from supers by brushing the bees off the combs with a bee brush. Sections of comb honey may be removed in like manner.

A more convenient way to remove surplus honey is the bee-escape method. A bee escape is a contrivance that fits into the hole in the middle of the inner cover when the wooden block is removed. The inner cover is then placed underneath the super to be removed and the bees go down through this bee escape into the brood chamber and are unable to return to the super. Bee escapes are listed in bee-supply catalogs. It is possible to place a bee escape under a super of honey in the afternoon and remove the super from the hive, without disturbing the bees, the following day.

It is well to get honey extracted from the combs as soon as possible after they are removed from the hive. Honey that is warm, right off the hives, is extracted easily and can be strained quickly.

Extracting Equipment

A small extractor, a two or three-frame machine, is large enough for the beekeeper with from one to twenty colonies. The picture shows equipment that can be used by any beginner. It is simple and yet efficient. The room used for extracting should have windows screened in order to keep out robber bees.

The extractor should be placed on a stand of some sort and anchored down securely so it does not rock while in motion.

Combs of approximately the same weight should be selected so that the machine may not be thrown out of balance. After combs are uncapped with a hot knife they are placed in the baskets of the extractor. A part of the honey is thrown out of one side of the combs, which requires only a few revolutions,

then the combs are reversed and all of the honey is thrown out of the opposite side. The combs should be reversed again and all of the honey thrown out of the first side. If all the honey were thrown out of the first side, the weight of the honey in the opposite sides of the combs might break the mid-ribs of the combs. The extractor should not be turned too rapidly at first, until some of the honey is removed. Good combs may be broken due to carelessness.

Strain Honey Thoroughly

Commercial beekeepers with large extractors use pumps for pumping the honey as it comes from the extractor, into the honey tanks. The small operator with a hand extractor simply runs the honey from the extractor into a bucket and then empties the bucket of honey into a small honey tank covered with two thicknesses of cheese-cloth for straining the honey. This cheese-cloth may be fastened over the top of the small honey tank by means of a wire tightened with a pair of pliers, or a small support for holding the cheese-cloth in place may be used.

During warm weather when honey is extracted immediately when removed from the bees it will run through the two thicknesses of cheese-cloth quite readily.

During cool weather it may be necessary to heat the honey before straining it. In order to do this the honey should be run into 60-pound cans from the extractor, and then heated in a wash boiler, with water surrounding the cans of honey, which should rest on wooden sticks to permit water to circulate around the bottoms of the cans.

Beekeepers should avoid heating honey to a high temperature as this may destroy the delicate aroma or flavor of the honey. It seems necessary, however, when honey is put up in glass jars, for grocers, to heat it to at least 160° Fahrenheit but this temperature should not be maintained longer than fifteen or twenty minutes, then cooled immediately.

Honey that is sold locally, for immediate consumption, to customers who bring their own containers, need not be heated, especially during warm weather.

Neighbors Who Dislike Bees

During the past few months we have been receiving reports from beekeepers in towns and cities who have been having some trouble with neighbors who object to having bees too close to their dwelling houses.

In some instances the beekeepers may be to blame because they do not use care in handling bees. Powerful colonies of bees usually object to being handled on a cool cloudy day when little or no nectar is available. Occasionally bees are cross even during a honey flow, especially during showery weather when they are kept in their hives a part of the day because of showers.

A complete extracting outfit: an extractor anchored on a box, a wash boiler to receive cappings, a ten-pound pail to heat water on lamp stove, uncapping knives, honey tank, strainer cloths.

When it is noted that bees sting badly, even during fair weather, hives should be closed up immediately until the bees are in better humor. This will usually avoid any trouble from bees stinging neighbors.

Then too, beekeeepers should be very careful, during a dearth of nectar to avoid leaving hives open or combs of honey exposed to the bees to start robbing.

The best cure for disgruntled neighbors is to give them a pail of honey which will usually cover a multitude of sins on the part of the bees. It pays to keep on good terms with all neighbors.

As time goes on and our country becomes more thickly settled the problems of selecting suitable apiary sights require more attention than in the past.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 15th of month preceding.

HONEY FOR SALE

WHITE clover and light amber. Lewis Klaty, Carsonville. Mich.

FANCY clover honey, case or quantity. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

REDUCED prices on comb and extracted. Write H. G. Quirin, Bellevue, Ohio.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, O.

SUPERB clover honey, extracted. Priced to sell. C. J. Baldridge, Romulus, N. Y.

FINEST CLOVER extracted honey, two 60's; $7.20. Irvin Van Devier, Medina, O.

CHOICE clover honey, new 60's case, $6.60. Sample 10c. Owosso Dairy, Owosso, Mich.

CLOVER comb and extracted. Quotations on request. Howard Grimble, Holcomb, N. Y.

FINEST QUALTY white clover honey. New 60's. Orval Dilley, Grand Ledge, Michigan.

CHOICE CLOVER and light amber honey in 60's. The Hubbard Apiaries, Onsted, Mich.

MICHIGAN'S finest well-ripened white honey in new 60's. Jay Cowing, Jenison, Mich.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

NEW CROP white clover comb and extracted ready to ship July 15. F. J. Smith, Castalia, Ohio.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

FINE QUALITY light amber honey packed in new sixties.. Harry Spooner, Stephens, Ark.

CHOICE white clover and light amber extracted honey in new 60's. Noah Bordner, Holgate, Ohio.

WHITE clover and buckwheat honey in 60's. Finest quality. A. B. McHenry & Son, Stillwater, Pa.

HOWDY'S HONEY—Comb and Extracted. It's the best and it's clean. Howard Potter, Ithaca, Michigan.

NEW CROP CLOVER extracted. Let me know the quantity you can use. Emery Horton, Holcomb, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

FANCY TUPELO and light amber honey for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Fla.

AMBER HONEY from fall flowers, $5.00 per case 120 lbs. Sample, 10c. Arthur Thayer & Sons, Freeland, Mich.

FANCY Tupelo honey, barrels and 60's. Write for prices and samples. Stevenson's Apiary, Apalachicola, Fla.

ASK FOR our new lower prices on our best Michigan clover honey. E. D. Townsend & Sons, Northstar, Michigan.

COMB and extracted honey. Best quality white, also amber. Write for prices. H. E. Crowther, Cass City, Mich.

CHOICE white clover and light amber extracted honey in new 60's, by case or ton lots. R. J. Williams, Attica, Ohio.

100 60-pound cans light clover honey at reduced price, to make room for coming crop. Jones Apiaries, Sauquoit, N. Y.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

FANCY white clover extracted honey, can or carload. Price on request. Sample, 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

WE BUY AND SELL ALL KINDS COMB and extracted, carloads and less; also beeswax. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

CLOVER HONEY FROM CLOVERDALE. Ohio's finest clover extracted in 60's. Sample, 10c. Prices upon request. The Cloverdale Apiaries, Cloverdale, Ohio.

NEW CROP clover in 60, 5 and 2½-lb. tins after July 15; also clover comb honey in shallow frames and 4x5 sections. Earl Rulison, Route 1, Amsterdam, N. Y.

COMB HONEY—Fancy white clover, $2.75 case; Fancy mixed, or amber, or buckwheat, $2. White clover, extracted, 6½c; Buckwheat, 5c; Amber, 5½c. C. B. Howard, Geneva, N. Y.

HILTNER'S quality white clover honey is really a fine honey, produced in modern apiaries, extracted with finest equipment, packed in new cans. Prices on request. Ray Hiltner, North Creek, Ohio.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

XUM

Good Queens
or just queens

It's performance that counts, not the few cents you might save in the price. In spite of our very best efforts we were never able to head our orders until June 9th this year. What is the answer? QUALITY QUEENS, and package bees.

Through balance of season
"RIGHT NOW SERVICE"
means,—24-Hour Service. Queens clipped free on request.

Prices: 1- 10, $0.50
11- 50, .45
51-100, .40
101- up, .35
} No discounts.

Package bees as listed in May advertisements.

Jensen's Apiary Co.
Macon, Miss.

Package Bees and Queens

If you want the most satisfactory package you have ever bought it's our loose-queen package. They are arriving 100% safe. Will cut your loss on failing queens. 2 lb. package with loose queen, $1.60; 25 or more, 10% discount. 3 lb. package with loose queen, $2.00; 25 or more, 10% discount. Untested queens, 40c each; 25 or more, 10% discount.

TAYLOR APIARIES, Luverne, Ala.

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c; 3 queens, $2.00. Stamps accepted for single queen.

Koolairy veil, $1.50 postpaid, SAFIN queen cage, $1, for ten; 15c for one.

ALLEN LATHAM
Norwichtown, Conn.

LOOK

Three-banded Italian bees and queens that are real honey gatherers and very gentle to work with. They work fine in cool damp weather. Health certificate with each shipment. Satisfaction Guaranteed.

ALAMANCE BEE COMPANY
Geo. Elmo Curtis, Mgr.
Graham, N. C.

RASPBERRY AND CLOVER HONEY. In 60-lb. cans for 8c a lb. Elmer Hutchinson & Son, Lake City, Mich.

NEW CLOVER comb, extra nice, 12 to 16 oz., mostly 15 oz. Very white, well capped. 24 sections, $3.00. Honey guaranteed to arrive in good condition by freight. Clarence Engle, Kearneysville, W. Va.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

HIGHEST cash price for your wax. Write for price and shipping tags. Walter T. Kelley Co., Paducah, Ky.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Apiaries, 12213 12th St., Detroit, Michigan.

FOR SALE

QUEEN PAINTING OUTFITS, $2.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

BEEGONE is quicker, cheaper, safer. Pint, 75c, express prepaid. Drives bees out of several tons honey. Honey House, Adrian, Michigan.

YOUR WAX worked into medium brood foundation, 15c pound; thin super, 22c. 10 pounds medium brood foundation $4.00. Fred Peterson, Alden, Iowa.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

CARTONS for Cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

USED 5-GAL. TINS — Good condition, emptied with dry heat—Single cartons at 15c each, also double wooden cases at 25c case, F.O.B. New York, subject being unsold. Honey Packers, Inc., 630 Fifth Ave., New York, N. Y.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Michigan.

FOR SALE—We are constantly accumulating bee supplies slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

WELL established yard, 50 swarms of bees. Health certificate guaranteed. Excellent condition for clover crop, winter cases, building, supers. ¼ cash; balance will take honey at highest wholesale price. Geo. Walthousen, 755 State St., Schenectady, N. Y.

$11.00 is our price for working 100 pounds of your wax into medium brood. Our large modern bee hive factory is manned by experienced workers, milling thousands of pounds of comb foundation, and hundreds of thousands of board feet of lumber into bee hives annually. QUALITY AT LOW COST is our motto. Free catalog. Free shipping tags for your wax. The Walter T. Kelley Co., Paducah, Kentucky.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

SILVER RUN QUEENS are sterling. Try them. W. E. Streetman, Midland, Ga.

80 COLONIES bees for sale. Guaranteed disease free. Henry Bauch, Dancy, Wis.

NORTHERN-bred queens, hardy, gentle Italians, 50 cents each. Shirl Baker, Rodney, Mich.

WE SHIP the day you want us to. Package Bees, Choice Italian Queens. Rapides Apiaries, Winnfield, La.

ITALIAN THREE-BAND QUEENS at market price. Circular mailed. D. W. Howell, Shellman, Georgia.

EMPIRE State strain Italian queens. Bred for honey production. 50c each. Coggshall & Son, Groton, N. Y.

ITALIAN queens, untested, 1 to 10, 50c each: 10 or more, 40c each. James E. Wing, Knights Landing, Calif.

50 COLONIES Italian bees, ten-frame standard hives. State inspected. $5.00 each. W. R. Landmesser, Ashtabula, Ohio.

SELECT northern-bred Italian or Caucasian queens, 75c each. Very gentle and productive. Conner Apiaries, Stockton, N. J.

ITALIAN Queens that produce hardy and gentle bees. Untested queens, 75c each. Robert B. Spicer, Wharton, N. J.

ITALIAN queens, N. J. Experiment Station stock, selected, carefully reared, 75c each. Circular. E. G. Carr, Pennington, N. J.

LEATHER-colored Italian queens, 50c each. Real queens. Real service. Small discount on 25 or more. Diemer Bee Co., Liberty, Mo.

THE NORMA ROY Apiaries—Italian bees, 2 pounds, 1 comb with queen, $2.00; 3 pounds, 1 comb with queen, $2.50. Norma E. Roy, Hessmer, La.

WING'S Italian Queens, extra gentle, non-swarming. Less than ten, 50c each. Ten or more, 40c each. Instant delivery. J. E. Wing, Cottonwood, Calif.

NORTHERN BRED QUEENS! Young, vigorous, leather-colored Italians. Personally reared and guaranteed to satisfy. 50c each. Try us. Greulick & Son, Scotia, N. Y.

EARLY PACKAGE BEES—Prompt shipment begins May 1. Two-pound package bees with queen, $2.45; 3-lbs., $3.15. Add 25c postage for each package. Choice Italian queen, 75c. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa., Box 363.

Hello Folks

Here We Are Again,

Stevenson's line-bred GOLDENS

We are those large, gentle, yellow bees you'll just love to handle and be proud to own. In addition we are the very best of honey producers. Our superiors have never been found. That is why our owners produce us. They know they are supplying their customers with the very best to be had. The queens are large, uniform, and very prolific, not subject to supersedure.

Write for descriptive circular.

1 to 9, 2-lb. pkgs. with queens, $1.95; 3-lb., $2.55. 10 and over, 2-lb. pkgs. with queens, $1.75; 3-lb., $2.30. Queens, untested, 50c; tested, $1.00. 15% discount to dealers and associations on unit price.

STEVENSON'S APIARIES
Westwego, La.

Quick Service

Dependable Selected
ITALIAN
QUEENS

Wire Us Your Orders
June, 50c.

THE PUETT COMPANY
Hahira, Ga.

Quality Follows Quantity

In a well managed queen rearing establishment this is why we can offer you genuine Mountain Gray Caucasian Queens at the following prices—June and after: Untested 1 to 11, 50c each; 12 to 24, 45c each; 25 and over, 40c each; tested queens, $1.00 each; select tested, $1.50 each; A-1 breeding queens, $5.00 each. All queens are high quality in every respect, thoroughly gentle, easy to handle and good honey gatherers.

Bolling Bee Co., Bolling, Ala.

A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES
Mt. Pleasant, Alabama

2-lb. package with queen, ...$1.75
3-lb. package with queen, ... 2.25
Select untested queens, each ..... .50

Write us for liberal discounts.

XUM

Three-banded Italian Queens

Large and hefty. Good pure stock and purely mated. You cannot get better ones and surely not much cheaper. 35c each, or three for $1.00.

SHAW & HOMAN
Shannon, Miss.

Italian Carniolan Caucasian QUEENS

Reared in separate apiaries.

Breeding Carniolans from Imported Stock.

50 cents each.

RONALD KIRK, Rockton, Pa.

Italians Caucasians

QUEENS

From the best honey producing stock. Raised by careful men of long experience.
Prompt fast service.

1 to 49	40 cents each
50 or more	35 cents each

WEAVER APIARIES
NAVASOTA, TEXAS

Queens, 50c

Italians of Quality
That Produce the Goods

JOHN G. MILLER
723 C St., Corpus Christi, Texas

CAUCASIANS. MILLER BROTHERS, Three Rivers, Texas. Oldest exclusive Caucasian breeders west of the Mississippi. Packages with queens introduced. Write for Circulars.

REDUCED PRICE on long-tongued Caucasian queens, 40c each; $35.00 per hundred. Safe arrival and satisfaction guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

REAL PETS—Brown's Stingless Bees. Good honey gatherers, non-swarmers. Season's price, $1.00 for a queen, over 10, 90c each. Brown's Apiary, Cape May Court House, N. J.

GOLDEN queens, excellent quality, will please the honey producer. Untested, 50c; tested, $1.00. Health certificate. Satisfaction guaranteed. O. E. Brown, Rt. 1, Asheboro, N. C.

MY CARNIOLANS build beautiful white combs. They winter with less stores. QUEENS, 50c; ten or more, 45c, postpaid. EPHARDT'S HONEY FARMS, LETTSWORTH, LOUISIANA.

"CARNIOLANS Exclusively." Queens from imported mothers. Jan Strgar strain. Untested, 1 to 10, 60c. Quantity prices on request. Tested, $1.50. Allen's Apiaries, Auburndale, Florida.

CAUCASIAN bees and queens, after June 1st, 2-lb. pkg., $1.65 each; 3-lb. pkg., $2.00 each. Untested queens, one, 50c; 10, $4.50; 25, $10.00. Safe arrival. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

EXTRA YELLOW Italian queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested $1.00 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. The stock has been bred and selected in the North the past 35 years for good winterers, hustlers, gentleness, and fine color; 75c each; dozen, $8.00; breeders, $6.00. Emil W. Gutekunst, Colden, N. Y.

For Stronger Colonies, Bigger Honey crops and Gentler Bees try our prolific, well-bred, three-banded Italians. Used for years by leading beekeepers of the U. S. and Canada. We are sure they will please you. We send all new, clean, light and convenient shipping cages; more than full weight of healthy young bees; select young laying queens of our own production; few or no drones and no disease. 2-lb. packages with queens, June to Sept. $1.95 each; 3-lbs., $2.50 each. Express or mail shipment f.o.b. here. Select young laying queens, 50c each. These prices are fair and reasonable. We expect to send only packages and queens of the finest quality and it costs money to produce them. Therefore, we are not throwing them at you at any old price. H. C. Short, Fitzpatrick, Ala.

DAIRY GOATS

DAIRY GOAT JOURNAL, Dept. 919A. Fairbury, Nebr., (monthly magazine, $1.00 yearly), gives complete information. Introductory 6 months, 25c. Literature FREE.

MISCELLANEOUS

WANTED—Root 2 or 3 frame extractor, in good condition. Russell Gibson, Trinway, Ohio, Rt. 1.

THE BEE WORLD—The leading journal in Great Britain, and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth. The Way's End, Foxton, Royston, Herts, England.

READ MICHIGAN BEEKEEPER, Devoted to Improvement of the Honey Market. One year, 50c. Single copy, 10c. Published bi-monthly at 406 E. St. Joseph St., Lansing, Mich.

Writer would be interested to correspond with established person who conducts beekeeping as a profitable side-line to normal business, on beekeeping matters and other topics. Preferably situated in any eastern state. H. G. Hilder, A.1. Filling Station, Brunswick Gardens, Doncaster Road, Bawtry, Yorkshire, Eng.

JUST NEWS

(Continued from page 445)

"Distinguishing Characteristics of Bee Diseases;" E. J. Anderson, Extension Apiarist, Pennsylvania State College, "Meeting Competition by Packaging;" and member talks on production of "Honey Hunks." Entertainment and refreshments are planned. All beekeepers are urged to attend.—Carleton T. Woodring, President.

• • •

In spite of continuous rain all day, June 18, the Tri-County Beekeepers' Association met at Delphos, Ohio. The grange hall was filled to capacity. A splendid program under the able guidance of Robert Porter, president of the Association, was enjoyed by all. Among the speakers were W. E. Dunham, Chas. A. Reese, Jerre Frazier, E. R. Root, Penn Snyder, Mell Pritchard, and E. M. Long.

• • •

The New Zealand Beekeeper, the official organ of the National Beekeepers' Association of New Zealand made its appearance in January of this year. It will be published quarterly for the present, with the hope that it will soon become a monthly magazine. The journal is published solely in the interests of beekeepers. We extend our good wishes to the editorial staff.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

BEES and QUEENS

3-band Italians

Priced as low as they can be produced without sacrificing Quality.
Prices after May 20th
Packages with Queens, any number, 2 lbs. $1.35; 3 lbs. $1.70.
Untested Queens, any number, 35c each.
For queenless packages deduct price of queen. Your choice of queens in dry or candy cages. 5% extra queens with orders of 20 or more packages.
No discount on these prices.
Highest quality, reliable service, full weight young bees and light crating.
Safe arrival and satisfaction guaranteed.

W. O. Gibbs, Brookfield, Ga.

TOO LATE TO CLASSIFY

WANTED—2 tons amber honey. Fairland Apiaries, 260 Park Dr., Dayton, O.

OVER 450 mostly two-queen stands, state inspected; 1425 8-frame hives and supers; 8-frame extractor. Kuster, Wheatland, Wyoming.

CORRECTION

Attention, Beekeepers!
Through an error the wrong cut was used in our ad in the June issue of Gleanings. Our new "X" Server, manufactured by the makers of the superior DRIPCUT Servers is made especially for the beekeeping trade and to retail for only 50c each.
The new "X" Server is of the same high quality as all DRIPCUT Servers and embodies all the famous DRIPCUT features. It is just what you have been looking for—a superior server at low cost. Write us for quantity prices and descriptive literature.

Honey Dispenser Sales Co.
Box 2077, University Station
Madison Wisconsin

Queens

Why take the Chance?

My carefully produced three-banded Italians will reduce your risk of a honey crop. June price, 35c each, any number. Capacity, more than 100 queens per day. Safe arrival and satisfaction guaranteed.

JOHN C. HOGG
Hahira, Georgia

Moore's Strain

Leather Colored Italian Queens
Superior Stock

50c

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. MOORE
MORGAN KENTUCKY

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

XUM

AMERICAN HONEY INSTITUTE

What It is Actually Doing for Beekeepers Over the Country

(1) Contacting Home Demonstration Agents in each state, asking them to include their own state Honey in their 1939-1940 demonstration programs.

(2) Contacting bakers to induce them to use honey in their products.

(3) Contacting Athletic Directors to get them to try honey for quick energy.

(4) Appearing on radio programs. Have appeared on two national hook-ups already this year.

(5) Preparing for Honey Harvest Week this fall in October.

(6) Commercial concerns are being contacted constantly.

(7) Co-operating with both World's Fairs.

(8) Preparing radio talks.

(9) Preparing future issues of Institute Inklings.

(10) Continuing work with universities and colleges to have honey included in their food and nutrition classes.

(11) Making contacts between buyers and producers.

(12) Studying honey marketing and advertising problems.

(13) Answering inquiries concerning honey.

(14) Supplying printed matter, honey leaflets and booklets.

We don't know how we shall do it but we want to permeate the medical field.

Help yourself by helping the Institute. Even $1.00 will help.

Send contributions to

AMERICAN HONEY INSTITUTE

MADISON, WISC.

Containers

Carload Stocks
Prompt Shipment

TIN

60-lb. cans, bulk or cased.
5 and 10 lb. pails, cartons of 50.
2½-lb. cans, cartons of 100.

GLASS

Modernistic, Bee Hive, Cylinder and Mason design, 2½, 5, 8, 16, 22, 32, and 44 oz. capacity.

COMB HONEY PACKAGES

Window Cartons.
Cellophane Wrappers.
Wood and Corrugated Cases.

New summer price list now ready.

The A. I. Root Co. of Iowa

Council Bluffs, Iowa

Honey Containers

To find a profitable market for your honey you must pack it in neat and attractive containers.
We carry large stocks of glass jars, three designs and sizes, 2½, 5, 8, 16, 32, and 48 ounce; also 2½ lb. cans and 5 and 10 pound pails, 60 pound cans in wood cases or individual cartons, or in bulk.—Write for our special price list.

Extracting Equipment

Roots pioneered in honey extractors and still make the best—more than 200 Simplicity Extractors in use in New York State and all giving perfect satisfaction. Let us help plan your extracting equipment. No charge for this service.

BEESWAX

We render old combs and cappings at a nominal charge. Our modern steam presses get out all the wax. We pay the highest market price for wax.

A. I. Root Co. of Syracuse

Midland Ave. and Tallman St.
SYRACUSE, N. Y.

SERVES YOU BEST

QUEENS 75c

2-lb. package with queen $2.45
3-lb. package with queen 3.15
15% to dealers.
No order too large, none too small to be appreciated.

OVERBEY APIARIES, Bunkie, La.

Thrifty Queens

35c each.
100 for $30.00.
Thrifty bees are guaranteed to please.

W. J. Forehand & Sons

Fort Deposit, Ala.
Breeders Since 1892.

Quality - Queens - Italians

Reared with care and experience.
Safe arrival and satisfaction guaranteed.
Mated Italian queens, 50c.
15% discount to dealers.

THE IDEAL APIARIES
Durant, Miss.

Don't Chop Your Grass

Shave the ground with "Marugg Special" imported, dangel cutting edge scythe. Catalogue free. Address **The Marugg Company**, Dept. B, Tracy City, Tenn.

PATENTS & TRADEMARKS
Williamson & Walton
Munsey Building
Washington, D. C.

Smith's Superior Queens

As good as money can buy.
1-9, 40c each; 10 or more, 35c each.

N. B. SMITH & CO.
Calhoun, Alabama.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for five shillings (Australian) at your Post Office.
Write now to The Editor, P. O. Box 20, **West Maitland, New South Wales, Australia.**

QUEENS QUEENS

Queens from STOVER'S

Produce Millions of Pounds of Honey a Year
Why Not Be One of Our Satisfied Customers?
Quality Counts When the Honey Can is Filled

ITALIANS CAUCASIANS

—Prices—

Three-Banded Italian Queens, ... $ .50
Caucasian Queens, ... .50

15% discount to dealers.
Clipped or By Airmail, at No Extra Cost

The Stover Apiaries, Mayhew, Mississippi

Stop Extracting Troubles!

There is nothing to worry about when you use a **Simplicity Extractor.** You can have any speed you desire. All machines are equipped with "Thousand Speed Attachment."

The **Simplicity** will handle cold or thick honey. You secure the maximum amount of first grade honey with a **Simplicity.**

Buy a Simplicity
20 Frames, $ 83.00
45 Frames, 132.00

Slightly higher prices west of Mississippi River

The A. I. Root Co., Medina, Ohio

Root QUALITY

MARKETING AND ORGANIZATION

(Continued from page 414)

vidual and collective efforts. All interests must cooperate, the producers and the commercial interests, such as the buyer and bottler, or we will never be able to put honey on an even footing with the many food products with which it has to compete for the favor of the ultimate consumer.

Does it not seem worth while for all of us to give this subject of organization serious consideration in order to put into effect at the earliest possible opportunity some basic plan that will build up our county, state and national organizations to a point where they can serve us most efficiently? The beekeeping industry is truly at the cross roads and further delay in effecting efficient local, state and national organizations will only mean that more ground will be lost to competitive interests—and lost ground is not easily regained. We can look forward to some constructive action at the National Beekeeping Conferences in Sacramento, November 7 to 10, but to insure the success of these conferences we must work **now** to build up our organizations. Let us all try to promote the interests of the honey industry by increasing the demand for honey in our own neighborhood,. by improving our county, state, and national associations through our own support and by putting **honey on parade** in 1939.

Davis, Calif.

Queens, 40c ea.

J. F. McVAY **Jackson, Ala.**

Mott's Northern Bred Italians

Eliminate that swarm nuisance

July, $1.00; 2 or more, 75c each; 50, 70c; 100, 65c each. Guaranteed pure mating or replace free.

Select tested, fair to good breeders, $2.00, $3.00, $5.00. Virgins, (day old) 3 for $1.00. List free.

E. E. Mott, Glenwood, Mich. U. S. A.

Gaspard's

Package bees and queens at June prices.

Write for full particulars.

Address J. L. Gaspard, Hessmer, La.

MACK'S Queens

They Speak for Themselves

Big—Vigorous—Hardy Northern-Bred Italians

We have had to establish several hundred more mating nuclei in order to give you 6-hour shipping service. As one man said, we can have queens to you before you hardly have time to find your old queens. If your neighbors howl about your cross bees they will scarcely know you have bees when all your colonies are headed with Mack's queens. Remember—All Mack's queens are fully guaranteed and are reared to Speak for Themselves. You won't go wrong when you deal with Mack.

Only .50 each.

Dealers and Bee Assn's. 15% discount.

Herman McConnell

(The Bee & Honey Man)

Robinson Rte. 2 Illinois

Requeen with Imported Strain ITALIANS

for better wintering and larger crops next year. Our strain of imported Italian bees will winter better and build up in the the spring, using less honey than the average bees. This is due largely to the longer life of the worker bees. They are not inclined to scatter the honey, filling all supers well, thereby saving you on supers and extra expense.

Let us help you to help yourself by using our imported strain Italian QUEENS.

J. G. Rossman, Moultrie, Ga.

Rossman

E.W. Long, Conover, Ohio

& Long

P. O. Box 133 Moultrie, Ga.

Quality Bred Italian Bees and Queens

Quality, not Price, Makes the Value

Beware and Buy Wisely

SUMMER PRICES

Untested young laying queens, ea.	$ .50
Tested queens, ea.	1.00
2-lb. pkgs. bees with queens, ea.	1.95
3-lb. pkgs. bees with queens, ea.	2.55
4-lb. pkgs. bees with queens, ea.	3.15
5-lb. pkgs. bees with queens, ea.	3.75

LOOSE-QUEEN PACKAGES, SAME PRICE AS ABOVE.

Packages without queens, deduct price queens. 15% discount to dealers.

Plenty of young bees and queens. Place your order now for quick service. Full weights, safe arrival and satisfaction guaranteed.

YORK BEE COMPANY

Jesup, Georgia, U. S. A.

(The Universal Apiaries)

Our wired foundation not only saves one the labor of wiring the frames but it also gives superior combs that will stand up under hard and continual use. Mr. Leo F. Hannegan from Hawaii writes, "Your wired foundation is the greatest improvement in bee supplies in my time, 1878-1939."

We wish to thank all our customers from coast to coast for their support and we give them the assurance that we shall be striving continually for good service and a more perfect product. With the 1939 season still on, we are already making preparations to meet the demand for next year.

F. KNORR & CO., Del Mar, California

Does Your Honey Crop Mean Anything to You?

If so, you will want queens of proven merit. All others are expensive at any price. Untested, 50c each. 15% discount to dealers.

J. M. CUTTS & SONS

R. 1. Montgomery, Ala.

GREEN HONEY

(Continued from page 415)

good insurance against fermentation. Even if it is some jobber who sells the honey for you, he can sell more if he is supplied with a good product that will sell and if he knows he isn't going to get stung every little while with fermentation.

Honey may be edible if there is not too large a percentage of green honey mixed in it, but some of the honey on the market today is of such poor flavor due to green honey, it is a wonder that it sells at all. A small percentage of green honey may not taste bad at the time of extracting, but too often after standing several months, it will develop that raw, sour, sharp flavor that is revolting to any stomach.

If no beekeeper would extract a comb of honey until it is all sealed, if all honey on the market was smooth, mellow, well-flavored, well-ripened honey, its consumption would increase beyond present production.

Middlebury, Vt.

We Give You

A DOLLAR queen for fifty cents. Well-bred by HOLLOPETER from select Italian stock. Safe arrival and satisfaction guaranteed.

WHITE PINE BEE FARMS

Rockton, Pa.

Commercial queenbreeders from 1911.

DEALERS ATTENTION

We have a special proposition of interest to all dealers or to all beekeepers who wish to become dealers of Beekeepers' Supplies. Write for information. All goods are GUARANTEED SATISFACTORY.

Falcon Quality Products

W. T. Falconer Mfg. Company

Falconer, New York

A RESOLUTION

(Continued from page 425)

sons deemed advisable by a majority vote at any regular meeting.

And be it further resolved that our Constitution and By-laws may be revised if necessary to incorporate the intent and spirit of this resolution and finally that our name be changed to, Muskingum Valley, Colony No. 1, Ohio Beekeepers' Association.—Signed: Joseph McCarty, President; F. J. Lutenberg, Secretary, May 11, 1939.

Queens 35c; 3 for $1.00

By Return Mail

Bright 3-Band Italian Bees and Queens of highest quality. Purely mated, safe arrival and satisfaction guaranteed. Packages express collect. Health certificate furnished.

2-lb. pkg. with Queen $1.35
3-lb. pkg. with Queen 1.75

JOHN A. NORMAN
Rt. 2, Box 38. LaPine, Ala.

June Queens

Are good queens
A very good time to requeen colonies which have poor queens.
THREE-BANDED LEATHER-COLORED ITALIANS
Select untested queens, ea...$ .50
Lots of ten or more, ea..... .40
Lots of one hundred, ea..... .35
We can make shipment promptly and every queen is guaranteed.

THE CROWVILLE APIARIES
J. J. Scott, Prop. Winnsboro, La.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

"Spoerri's Goldens"

Large, gentle, and SUPER-PRODUCTIVE! Original Italian stock but improved and bred up over a long period of years. Every queen is young, fertile, and personally reared; bees very little inclined to swarm.

"PROVE TO YOURSELF" that this is the ideal bee you have been looking for. Young Laying Queens 1 to 4, 60c each, postpaid; 5 to 19, 50c each, postpaid; 20 and over 45c each, postpaid. **Authorized** Dealers 43c each, postpaid.

SPOERRI APIARIES
St. Bernard, P. O., Louisiana

Palmetto Quality Queens

Again we solicit your orders for our high quality Queens for the season of 1939. Prices as follows: 1 to 10 queens, 40c each; 11 to 50, 37c each; more than 50, 35c each. 15% discount to dealers purchasing 100 or more queens during the season. Above prices in effect May 25. We guarantee satisfaction and a square deal.

C. G. Ellison & Sons, Belton, So. Car.

Queens 35c ea.

3 for $1.00 Ry Return Mail

BRIGHT 3-BANDED ITALIANS

Take advantage of lower prices and requeen with proven quality. Our seventeen years' experience assures you of the best stock money can buy. Safe arrival, satisfaction guaranteed, health certificate furnished.

2-lb. pkg. with queen $1.25
3-lb. pkg. with queen 1.50

NORMAN BROS. APIARIES
Ramer, Ala.

30c Queens

Three-banded Italians

In lots of 1 to 25 @ 35c each
In lots of 26 to 99 @ 33c each
In lots of 100 and up @ 30c each

Get queens (Daughters) from our Progeny Tested Breeders. This is important to you.

Garon Bee Co., Donaldsonville, La.

The Rosedale Electric Uncapping Plane

The fastest and most efficient hand uncapping device on the market. Does away with oil stove steam boiler. Now used for steam plane or knife. Equipped with 200 watt, 110 volt or 32-volt removable element. Satisfaction guaranteed or money refunded. Retail price, $10.00 complete with cord and switch on cord, delivery charges extra. Write for free circular on electric and steam planes.

Sold by the G. B. Lewis Co., Watertown, Wis.; Dadant & Sons, and all Lewis-Dadant dealers. Also sold by other leading bee supply companies in U. S. A. and Canada.

Italian Queens

Industrious
Hardy
Gentle

Check your calendar to Order Root Queens During August

Prices for U. S. A. and Canada:
1 to 10, 75c ea.; 11 and over, 70c ea. (postpaid)

Beekeepers who recognize the value of good queens are sending orders NOW for 75 to 100 queens each. There are reasons why Root queens are preferred.

The A. I. Root Co., Medina, Ohio

NEW
Counter Display Case

For comb honey in Beeway sections. An attractive case printed in two colors that develops sales. Can be used over and over—12 section size, 10 for $1.52; 24 section size, 10 for $1.82.

DAY AND NIGHT "HONEY FOR SALE" SIGN

A fine attractive modern sign. Reflects the lights from the autos. Heavy, enameled metal sign. Just the sign for your stand, only $1.60. Mailing wt. 5 lbs.
(We have other honey signs.)

MODERN HONEY LABELS

Printed with varnish inks. We have a complete line of honey labels. Write for Catalog.

MODERNISTIC GLASS JARS

TIN CONTAINERS

PARCEL POST HONEY CONTAINERS

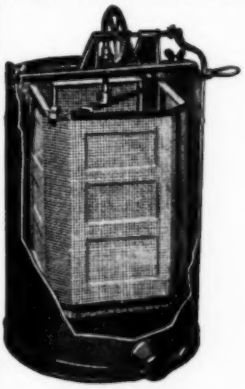
Send for free booklet, "How to Sell Honey."

Root QUALITY BEE SUPPLIES

The A. I. Root Co., Medina, O.

This Double Duty Extractor

Extracts Combs Fast and Efficiently, Dries Cappings in Few Minutes



PATENTED

A complete stock of beekeepers equipment. ASK YOUR DEALER—if he cannot supply you write for catalog or prompt shipment.

60 years of service your Guarantee of Quality.

No. 14 (illustrated) takes 4 Standard or 8 Half-Depth frames. No. 10 takes 3 Standard or 6 Half-Depth frames. No. 12 takes 3 Jumbo or 6 Shallow frames. No. 18 takes 4 Jumbo or 8 Shallow frames.

Strong reinforced construction. Full comb support. Balanced reel turns on ball bearings. Adjustable flow honey gate.

Cappings Dried Quickly and Right

Entire top gearing lifts off to easily pour in cappings. Whirling a few minutes dries them. Reel basket quickly lifted out to dump dried cappings and clean.

No.	Size	Pockets	Weight	Hand Drive	Power Drive
No. 10	3-Frame	9⅝"x16"	40 lbs.	$13.35	$18.85
No. 12	3-Frame	12"x16"	50 lbs.	14.90	20.40
No. 14	4-Frame	9⅝"x16"	50 lbs.	14.35	19.85
No. 18	4-Frame	12"x16"	90 lbs.	20.50	25.50

STANDARD PRODUCTS—A sign of good equipment

24-Frame Radials	$78.00
2-Frame Reversible Extractors	21.50
Bee Smokers (with leather bellows) 3½x7, .95—4x7	1.10
Plain Uncapping Knives—10½" size, $1.25—8½" size	1.10
Steam-Heated Knives (2 stem with tubing)	4.35
2 Gal. Steam Boiler for knives	2.50
Bee Escapes (2 way style) 11c each, 12 for	1.15
Hive Tools (with nail hole)—10" size, .55—8" size	.50
Spur Wire Imbedders	.20

The Standard Churn Co.

WAPAKONETA, OHIO

FOR SALE!

Pure Italian Bees and Queens

Bright Yellow and Three-Band Queens,

40c each

1 lb. bees, young queen, ..$1.00
2 lbs. bees, young queen, .. 1.50
3 lbs. bees, young queen, .. 2.00

15% discount to dealers and large order. We guarantee bees and prices. Write us what you want and we will satisfy you.

Graydon Brothers, Greenville, Ala.
Route 2

Queens Queens

GOOCH'S Three-band leather-colored Italians. All queens mated from strong standard 3-frame nuclei large size. Any number, 40 cents each.

Gooch Apiaries

Farmersville :-: Texas

Caucasians

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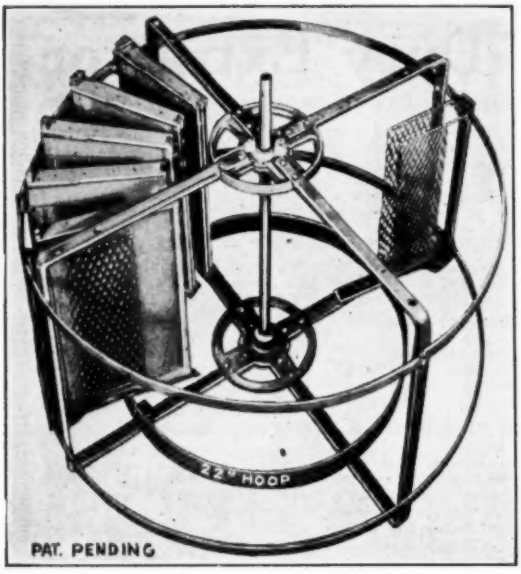

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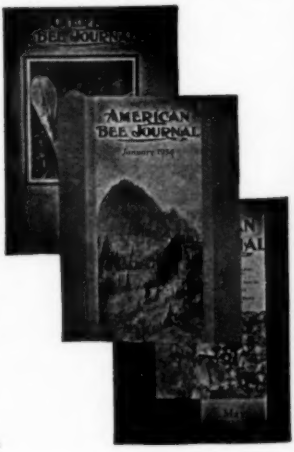

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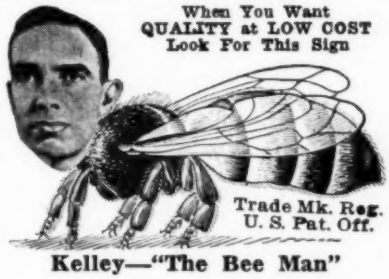

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